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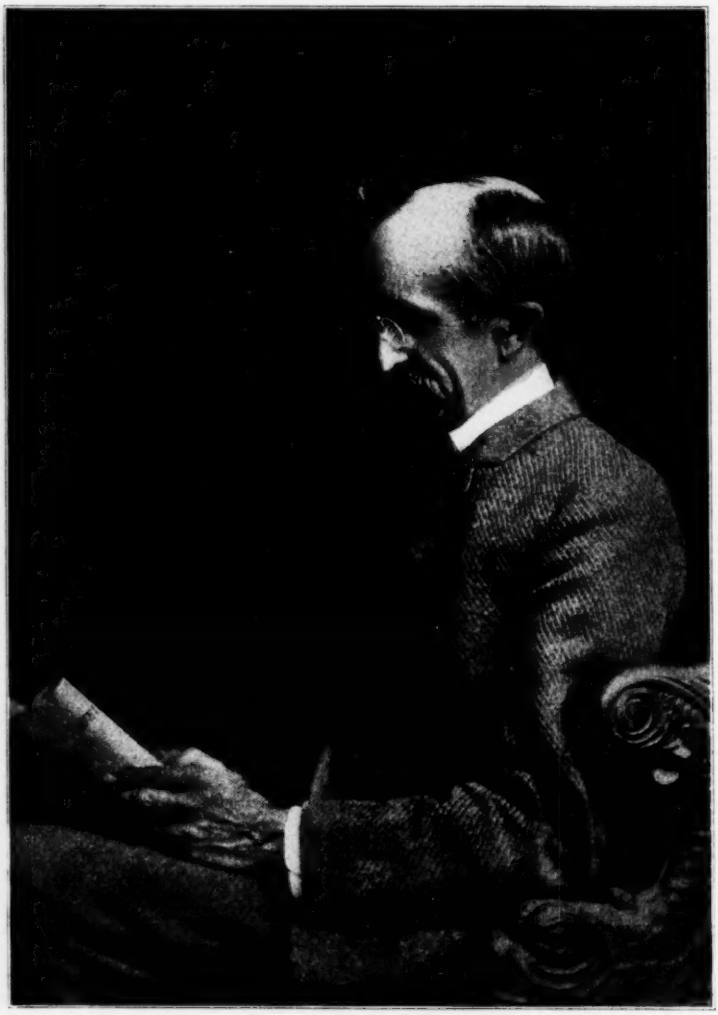

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DR. EDWARD L. TRUDEAU, 1848-1915

The American Journal of
CLINICAL MEDICINE
Dependable Therapeutic Fact for Daily Use

Vol. 29, No. 2 February, 1922

The Physician and American Chemistry

DURING the past five years, much has been done to bring the increasing importance of American chemistry to the attention of the layman. The greatest gain made in popularizing chemistry was, of course, during the war, when the country turned to the chemist to furnish the drugs and dyes no longer obtainable from abroad and to furnish chemical weapons against an enemy that had already spent much time in perfecting this form of warfare. American chemists accomplished results which were remarkable. They were praised and appreciated at a time when they were making a victory possible. Now, that a peace has been made, are they and their efforts going to be forgotten? With foreign products restored to the commercial trade, are imported dyes and drugs to be used or prescribed while the American products of equal and, in many cases, of superior grade are neglected?

Because of the lesson learned during the war, it would be difficult to find an individual who has not had brought to his realization that the chemical industry in the United States is of vital interest to everyone. The novelty of this industry is now wearing off and the tendency of those not directly interested is, to take American chemistry for granted and forget that it is still young and that only by the support of loyal Americans for American goods can it reach a position where it can stand by itself.

Numerous chemical concerns have already failed and many are having serious difficulties on account of importation and foreign competition.

The physician is most interested in the field of synthetic drugs and pharmaceuticals. Very little has been done, however, to point out to him the vital importance of this branch of the chemical industry as far as his own profession is concerned. Moreover, very little has been done to im-

press upon the physician that he may have a tremendous influence in the future success of the chemical industry by advising the use of and procuring American-made products wherever possible in place of European drugs. In many cases, the physician is ignorant of the facts connected with the various synthetic drugs. He is unconscious of the fact that he might be called pro-German.

There is hardly a person who has not used or does not know about Aspirin. Formerly, the German house of Bayer and Co. made and sold this product exclusively. Because the public was accustomed to buy Bayer's Aspirin, this concern took advantage of every opportunity to persuade the public that no other Aspirin is quite as good. As a matter of fact, American Aspirin costs less than Aspirin sold by German concerns, and it is at least just as good. The public has not been educated to the fact that one Aspirin, if pure, is as good as another.

A few years ago, when the United States entered the war, the National Research Council appointed a committee on Synthetic Drugs. This committee collaborating with The American Medical Association decided that the American manufacturers could be best protected by forcing them to use names for certain important drugs different from those formerly used by the Germans. The important local anesthetic known as "Novocaine" was called "Procaine"; the soporific "Veronal" was renamed "Barbital"; the extremely efficient uric-acid eliminant, "Atophan", was renamed "Cinchophen"; the trypanocidal substance, "Salvarsan", was called "Arsphenamine". These names were adopted by the U. S. Federal Trade Commission and thereby made "official". If the physician had done, or would do, his part in prescribing these various drugs by the American names rather than by the former German names, very much would be done thereby to aid the American manufacturers, and the public would learn to know the American names of American-made drugs. At the present time, only the particular concerns which are actually representatives of the German concerns can now sell these products under the former names. Consequently, prescriptions calling for these substances give tremendous aid to the former manufacturers, to importers or to the representatives of foreign houses, and they hurt the trade of the American concerns.

How many physicians realize that the wholesale prices of the synthetic drugs mentioned above, as well as of many others manufactured in this country, are, with possibly an occasional exception, much lower than the 1914 prices of the imported products? This is in spite of the fact that raw materials and labor are much more expensive in this country. On account of foreign exchange, very cheap labor and the stocks of materials which are now available in Europe, these drugs have been slipping into this country from abroad at a much lower price than that which the manufacturer here can make them for.

Few physicians realize how much work has been done during the past years in the research laboratories of the pharmaceutical concerns. Research laboratories are expensive to maintain, but it is only through these laboratories that new substances may be discovered which will be of importance to the medical profession and which will make America independent of foreign firms. In order to emphasize this point, a few of the new drugs that have been discovered in American laboratories might be mentioned. It is true that some of these new drugs are not yet well known to every physician but many of them are growing rapidly in importance.

In the field of local anesthetics, Parke, Davis & Co. was the first firm to put out a purely American product. It is called "Apothesin" and, chemically, is the hydrochloride of gamma-diethyl-amino-propyl alcohol-ester of cinnamic acid. This substance has been introduced as a substitute for Procaine and, for certain types of work, is an effective substitute. Another local anesthetic which is also a purely American product has proved to be of value to physicians and surgeons to replace Cocaine in operations involving particularly mucous-membrane anesthesia. This is sold by The Abbott Laboratories under the name of "Butyn", the sulfate of para-aminobenzoyl gamma-di-n-butylamino propanol. It is the first valuable substance of this type to appear commercially, either in this country or abroad. Butyn not only can take the place of Cocaine, but has many properties which show it to be much superior to Cocaine for this purpose; it is very rapid in its anesthetic action; it is twice as powerful

as cocaine; it can be sterilized in solution by heating to boiling with no danger of decomposition; it is not habit forming. More recently, it has been found that, in very dilute solution, Butyn may be used in injection anesthesia and that it has advantages over the ordinary 2-percent solution of Procaine.

The use of Benzyl Benzoate, a non-narcotic and non-toxic substance, especially as a powerful antispasmodic, has come to the attention of most physicians. The original discovery was made by Dr. David I. Macht, of Johns Hopkins University, but the research laboratories of the various pharmaceutical houses have been prompt to carry the investigation further, with the consequent discovery of other substances of a similar nature which have an even more powerful action than Benzyl Benzoate. Of these, Benzyl Fumarate, discovered by The Abbott Laboratories and to be sold under the name of "Fumyl", is one of the most active; others of a somewhat similar nature are Benzyl Stearate, produced by the Eli Lilly & Co., and Benzyl Succinate, sold by Hynson, Wescott & Dunning and (under the name of "Esterol") by Frederick Stearns & Co.

One of the most notable discoveries in this country which, to be sure, was made in a university laboratory but which nevertheless is the same type of problem that is carried on in the research laboratories of the various pharmaceutical houses, was the isolation of the active principle of the thyroid gland. Dr. E. C. Kendall found how to get this substance in pure form and it is now being sold commercially by E. R. Squibb & Co. This substance is much more valuable than anything heretofore known for increasing the metabolism in diseases caused by hypothyroidism.

These are just a few examples of a dozen or fifteen substances which have been developed due to the stimulation of chemistry in this country and the presence of research laboratories in the pharmaceutical concerns. Such research as had led to these developments will have to be discontinued unless every physician makes it a point to back American products in every case. The physician, moreover, has been trained in chemistry and is one of the important group of professional men who can understand the value of chemical research. It is the duty, therefore, of every physician to take occasion, whenever possible, to point out to the people what chemistry has done in the past, and what it can do in the future in this country, if it is supported in the right way and if a reasonable protection can be procured for it until the industry is well enough established to take care of itself.

ROGER ADAMS, PH. D.
Professor of Organic Chemistry,
University of Illinois.

Honest and courageous people have very little to say about either their courage or their honesty. The sun has no need to boast of his brightness, nor the moon of her effulgence.—Hosea Ballou.

E. L. TRUDEAU

Back in the seventies, the chief diagnostician of New York was Edward Gamaliel Janeway. In those days, no New Yorker was quite sure about his constitution until Professor Janeway had pronounced his opinion. When Janeway examined you and smiled, it meant a certificate of health; but, when Janeway looked serious, you were sick.

One morning, a recent graduate passed West Fourteenth street, looked up at Doctor Janeway's sign—and walked into his office. The youthful physician didn't feel especially sick, but some of his colleagues insisted he must be ill, and it would give him satisfaction to report that Janeway himself had declared him whole and sound. He knew there was really nothing to worry about; his fever had been diagnosed as a touch of malaria, and the swollen lymphatic glands of his neck had been treated by various doctors who instructed him to apply iodine and eat more bacon for breakfast. He felt confident that Janeway's findings would be merely confirmatory.

The sun was shining, and life was infinitely sweet to the young doctor that morning. He had the finest pair of little trotting mares, a racing shell boat, and a membership card in the Union Club. He had long been a ladies' man, and, for years, had gaily led so care-free an existence, that when he first announced his intention of studying medicine, the Club laughed. And Dan Moran said, "I bet five hundred dollars he never graduates!" The only reason Dan

Moran didn't lose this bet, is because none of the boys accepted his offer.

The one thing that the young medicus had wanted most in his twenty-five years of life was Miss Charlotte Beare. Often the quest seemed uncertain, and at times hopeless; yet, even before receiving his diploma, the lady permitted him to announce their engagement. Last year, in Douglas Manor there had been a grand wedding, and now there was a baby "Chatte" at home. The thought of his wife and child in their new home, mingling with dreams of a successful career as a practititioner, flooded the doctor's heart gratefully, as Janeway thumped his chest. The master of physical diagnosis concluded his examination—and remained silent. "Well, Doctor Janeway," cheerfully queried the other, "you can find nothing the matter?" Then Doctor Janeway spoke: "Yes, Doctor Trudeau, the upper two-thirds of the left lung is involved in an active tuberculous process."

Without a whimper, the younger physician thanked the elder, and left his office. But, when he got outside, and leaned against Janeway's stoop, he knew that the foundations of his life had been swept from under him. In the seventies, we still lived in the dark ages of phthisis, when millions in ignorance were hurried to the grave, for the tuberculous patient was invariably warned against the dangers of fresh air, and was urged to exercise to increase his appetite. There was no organized effort against the greatest of plagues, and not a single sanitarium where a patient could receive treatment. At that time, a diagnosis of consumption was almost equivalent to a death-sentence. No one knew this better than Trudeau; for, had he not seen his beloved brother stricken by the powerful foe of the human race? He nursed his brother, ate with him, and slept with him with unopened windows—as the contagiousness of tuberculosis was not then generally taught, although Galen knew it in the second century—and his brother died in his arms. After a short interval, a Janeway was not required to reveal Trudeau's condition, for his emaciation and weakness told the diagnosis.

Civilization had wounded Trudeau, and the doomed man fled to the wilderness. Lying on a mattress, Trudeau finally arrived at Paul Smith's hunting-lodge in the remote Adirondacks, where a mountain-giant named Fred Martin picked him up as if he had been an infant, and, going up two flights of stairs two steps at a time, put him down on his bed with a simile that has since become classic: "Why, Doctor, you don't weigh no more than a dried lamb-skin." All who saw him, including the specialist Loomis, expected him to die; yet, among the great pines of the forest, the exile lingered. Winter came, with its exodus of tourists and hunters from the snow-enshrouded mountains. Trudeau was implored to go south, as it was deemed madness for a chest invalid to brave the winter winds of the Adirondacks—it had never been done before.

Still, Trudeau and his family remained among the Adirondack snows, sixty roadless miles from any town. Watching himself improve, he learnt the need of fresh air in tuberculosis, and the value of rest. Dedicating his soul to his fellow-sufferers, Trudeau became one of the spiritual forces of our era. Upon a hillside of the unbroken forest at Saranac, he built a small cottage, and two shabbily-clad factory girls entered as his first patients. That unpainted shack was the origin of the Adirondack Cottage Sanitarium, now grown so vast,—the first in America for the treatment of tuberculosis. It was followed by the Saranac Laboratory—the first in America for the study of tuberculosis. Here Trudeau himself, with home-made apparatus, performed experiments which won the admiration of a Prudden, a Welch, and an Osler.

From every state in the Union, and from most foreign lands, men and women and children of all races and creeds came as pilgrims to receive healing at the hands of Trudeau. The sick man, who lived all his life on the edge of the grave, was a cross of hope to which thousands clung! Thus, amid the hills of Saranac, was born one of the great romances of modern medicine.

Endless times throughout the ripening years, Trudeau was prostrated and tortured by his ancient enemy; he drank deeply of every cup of sorrow—except that he never tasted the bowl of failure. When too ill to stand, and even too weak to sit, he accomplished miracles. No man ever had a nobler wife or better friends, and with their aid Trudeau founded the City of Hope which has not only helped and cured innumerable thousands of human beings but

has revolutionized our practical knowledge of tuberculosis, and everywhere set the pace for the open-air sanitarium treatment. In humanity's world-wide battle against the Great White Plague, by the side of Laennec, Louis, Villemin, Bodington, Koch, Cohnheim, Brehmer and Dettweiler, we place the name of Trudeau.

"Should we not institute a new order of sainthood?" asks Henry Fairfield Osborn. And he explains that entrance to this order would be granted to those who, by extending the bonds of knowledge, have become benefactors of the human race, through the relief of human suffering, and the prolongation and salvation of human life. For this New Order of Sainthood, our age can find no worthier candidate than Doctor Edward Livingston Trudeau.

VICTOR ROBINSON, M. D.

No man or woman of the humblest sort can really be strong, gentle, pure, and good, without somebody being helped and comforted by the very existence of that goodness.—Phillips Brooks.

THE POINT OF VIEW

In his department, "Good Medicine," Doctor Candler recently commented upon Doctor Barker's declaration that "we are now witnessing a cautious revival of the use of drugs in the treatment of disease." This statement was published on October 8, 1921. It is interesting and surprising to compare it with a statement made, fifteen years ago, by Dr. R. C. Macfie in a remarkably interesting book entitled "The Romance of Medicine" (Lond. 1907, p. 295). Doctor Macfie said: "What Sir Frederick Treves has called 'the extraordinary habit' of taking drugs when ill is still prevalent, and medical practice still consists largely in prescribing pills and potions. No longer is an incantation given with the prescription, but, still in many cases the efficacy of the drug depends more on the faith of the patient than on the potency of medicine."

It is quite evident that Doctor Macfie is a surgeon or at least has a decided surgical bias. If he were an internist and were content to practice medicine without appealing to the faith of his patients and without using such remedies as are able to restore disturbed physiological functions to "normalcy", he would be guilty of a serious charge. We can not admit that any medical man, who has no confidence in his methods of healing, has any right to practice medicine.

After all, it is surprising that, in this twentieth century, there can be men who take Sir Frederick Treves' remark seriously. Enough has been accomplished in the last twenty years in the way of pharmacological research to afford definite proof that we have ample remedies on hand to guide disturbed physiology back to normal. Moreover, clinical experience, as laid down from the observations of good and reliable observers, affords definite proof that the list of dependable remedial agents is even greater by far than that number of them that has received the O. K. of the pharmacological laboratory.

If anybody were to say that clinical observation is not a criterion, we beg to refer him to almost anyone of Sir James MacKenzie's addresses, journal articles, and books, in which he discusses the problems of clinical observation of real honest-to-goodness practice of medicine, of the duties and, no less, of the opportunities of the general practitioner. It can not be denied successfully that, among the clinicians of old who could not resort to modern-day surgery, who did not have the immense advantage of laboratory facilities, who did not even have at their disposal any of the modern instruments of precision that, rightly used, make diagnosis so much easier, there were many, very many who *practiced medicine*, at least as successfully as, if not more so than, most of our present-day modern clinicians. At any rate, these forebears of ours were not satisfied with simply making a diagnosis and let it go at that; they did not believe their duty to have been fulfilled when they had told their patients what ailed them. In their opinion, it was up to them to relieve their patients of their ailments. We conceive that that constitutes the greatest duty of the physician. At any rate, that is what the patient wants and what he pays his money for.

We have no quarrel with surgery as long as it does not encroach into territories that don't belong to it, as long as its proponents do not become supercilious and arrogate to themselves the sole ability to do good work. Surgery is all right within certain well-defined limits. Many times, it has done untold harm, often it has been employed when medicinal means could have been utilized to greater advantage. The

time is fast coming when the limitations of surgery will be realized more fully and, therefore, its limits will be drawn more strictly.

Nor are we unmindful of the immense growth and advancement of physiotherapeutic methods. Electrotherapy, radiotherapy, mechanotherapy and all other methods of employing physical means of treatment are rapidly being recognized and appreciated and their wonderful possibilities for good are coming to our fuller realization. Still, even these methods have their limitations. Many times, they must be supplemented by drug remedies that are capable either of establishing a normal body chemistry or of restoring perverted bacterial action within the organism or of stimulating certain portions of the nervous system or even the endocrine system which by no means is the least important part of the animal economy.

In the end, it is, after all, a question of using common sense and level-headed judgment. As the preacher of old declared justly, that everything has its time, so in the practice of medicine every remedial agency has its indications and its contraindications, its power for good and for evil. There is not a single one of them, whether it be drug-therapy or physiotherapy or psychotherapy or surgery that is capable of curing all the ails to which we are heir. Among this remarkable and wide armamentarium, the medical man must make his careful selection, determining in each individual case just which of the numerous agencies at his command may be indicated. Of course, he must know where and how the bodily functions are at fault. He must be fully conscious of what he desires to accomplish and he must, by no means, leave out of consideration the patient's mental make-up and his psyche. Very often, indeed, strengthening of the patient's morale will go far toward restoring him to normalcy.

It is a merry game, my masters, but, as always, he who thinks deeply, considers logically, and decides courageously will produce the most worth-while results.

THE VALUE OF PERIODIC MEDICAL EXAMINATIONS

From the *Statistical Bulletin*, Metropolitan Life Insurance Company (Nov., 1921), we gather the information that, for more than seven years, the Metropolitan Life Insurance Company has made it possible for policy-holders in its Ordinary Department to obtain, without cost, a physical examination and the other health service offered by the Life Extension Institute. Between February, 1914, and July 31, 1921, this company has authorized nearly 95,000 physical examinations through this agency. During this period, the company has expended in excess of $225,000 on this form of life conservation work.

In order to discover the possible effect of these examinations upon the mortality of its policy-holders, Dr. A. S. Knight, Medical Director of the Company, studied the after-history of the individuals who were examined during the first two years of the experiment, 1914 and 1915. A total of close to 6,000 persons was examined in those two years and their after-history was observed up to November, 1920. This corresponded to an average period of five and one-half years per person. Up to the end of the observation period, there actually occurred 217 deaths among the examined persons. There should have been a total of 303 deaths if the mortality expected from persons of this class had actually occurred. There was a saving, therefore, of 28 per cent in the mortality over a period of five years. This result was confirmed by independent investigation, and the monetary value of the saving in mortality was calculated to be in excess of $126,000. From this amount must be subtracted the cost of the original and subsequent examinations made for this group of 6,000 policy-holders. The cost was approximately $40,000. It would appear, therefore, that the company, on this particular group of policy-holders, had its principal returned and made a gain of about 200 percent on its investment during a period of approximately five years.

This, however, was not the outstanding feature of the experiment. The important point to remember is, that there has been a saving of life corresponding to 28 percent of the expected mortality in the short five-year period. It was to demonstrate the life-saving possibilities of such health work that this activity was begun. It has been established to the satisfaction of this company that periodic medical examination is justified by the benefit in added life expectancy to the policy-holder examined. It is hoped that other agencies will see the

value that follows from annual physical examinations and all that goes with that type of life conservation.

Every individual has a place to fill in the world, and is important in some respect; whether he chooses to be so or not.—Hawthorne.

RELATION OF PULMONARY INFECTIONS TO CALCIUM METABOLISM

There is a wealth of material and scientific theorizing, concerning the relation of pulmonary infections to the calcium metabolism, to be found in an article written on this subject by Dr. Palacios in the *Medical Record* for March 19, 1921.

In the very beginning of his article, the author makes an important statement which every physician ought to know, namely: An exclusive milk diet is a very harmful dietary, a sort of physiological absurdity. He is undoubtedly right in his statement and we wish that every physician and, for that matter, any one who is interested in dietetics should bear in mind that, just because milk is an ideal food for infants and babies, is no proof that it is also an ideal nutriment for adults.

By comparing the calcium content of milk with that contained in other foodstuffs, we find that milk contains a far greater proportion of calcium than any of the foodstuffs in common use, barring spinach.

The ingestion of a great amount of milk breaks the balance between calcium intake and calcium excretion with a resulting retention of calcium in the body.

As a consequence of this retention, Dr. Palacios names the fact that, on a dominant milk diet, fecal stagnation usually occurs.

Fecal stagnation leads to the production of ammoniacal compounds and volatile acids which in turn attack the calcium carbonate and phosphate of the feces, forming soluble calcium salts or volatile fatty acids. Thus, a vicious circle is established tending toward calcium absorption into the blood and its retention in the body.

It is this increased retention of calcium that Dr. Palacios points to, as a chemical basis for influenza, pneumonia and other infectious maladies of the respiratory tract. He gives the following reason for his belief:

Calcium salts are a necessary ingredient for the formation of fibrin, as proved by those who studied the phenomenon of blood clotting. The formation of a great deal of fibrin is the outstanding feature in such conditions as lobar pneumonia. Simultaneously, according to Loeper and Béchampt, we find an increased internal retention of lime during these diseases. In view of these findings, the author considers it the most rational indication for treating pneumonia, no matter what type it may be (influenzal or otherwise) to induce a rapid decalcification of the body. To achieve this successfully, the author advises:

1.—The omission of milk and other dairy products during disease and convalescence.

2.—Repeated purgatives, castor oil being the one of choice.

3.—Prolonged fasting until signs of returning health are re-established.

4.—Plenty of pure, filtered and thoroughly boiled water is given.

This method has proved efficacious in the hands of the author, especially during the influenza epidemic, which was even more frightful in Caracas, Venezuela, the residence of the author, than in this country. The idea is certainly worthy of trial by other physicians.

The reason why we should avail ourselves of the suggestions outlined by Dr. Palacios, is quite obvious. As yet, we have no adequate treatment of pneumonia. Over 83,000 lives are lost in the United States through pneumonia, and any method proving itself to be efficient in reducing such a frightful mortality should be more than welcome. The treatment seems rigorous and energetic, especially the fasting part of it.

It is the abstractor's opinion, however, that the good which fasting accomplishes, by hastening the process of decalcification, is not equal to the evil that may result by lessening the resistance of the patient due to starvation.

Although pneumonia is not such a wasting disease as is typhoid fever, for instance, yet there is an increased metabolism going on within the organism, catabolism gaining the upper hand; and the maintenance of normal metabolism by light, yet nourishing, foods is absolutely essential. Of course, we should select such foods that have the least calcium content. In addition to the use of purgatives, we could thus at least reduce the calcium content of the organism, if not totally eliminate it.

The precaution referred to should be

borne in mind, especially when the patient happens to be of the emaciated and anemic type. In the plethoric cases, one needs not fear to employ the drastic method of Dr. Palacios, who concludes his article by the pathetic appeal: *"Fiat experimentum,* and save American lives!"

Friendship is to be purchased only by friendship. A man may have authority over others, but he can never have their hearts but by giving his own.—Thomas Wilson.

THE DOCTORS' ECONOMICS

One of our subscribers refers to an editorial in which we expressed our desire to be of assistance to physicians in promoting an improvement in the economics of the medical profession.

This subscriber suggests that we devise a practical plan of cooperation for a group. What size is most advantageous, he asks. Who should be its component members? How would you equalize the benefits derived by the man with a big practice and the one having a small one? How is the income of the group to be distributed? How are the profits to be calculated and administered?

Our subscriber is quite sure that the mass of our readers have often longed for the benefits to be derived by group association, but could see no way of securing these benefits without sacrificing some of their already too-small income.

Here we have a suggestion that appeals to us as thoroughly practical. It comes from a man evidently in general practice and who has thought, seriously and to some purpose, on the lines of physicians' economics. There can be no doubt about the immense practical importance and interest attaching to this problem. Indeed, we are so convinced of this that we desire to open the pages of CLINICAL MEDICINE to the discussion of this problem in its various phases.

Before we approach individual physicians, requesting them to prepare articles on the subject, we should like to have our subscribers write to us and tell us what they themselves are willing to do in the matter. Will you consider and discuss the subject, either in general or certain ones of its phases? Let your discussions be elaborate or small; but, let us hear what you have to say. We are of the opinion that a discussion, which may run through several issues of CLINICAL MEDICINE, will prove of great advantage.

ABOUT CONTRIBUTIONS TO "CLINICAL MEDICINE"

CLINICAL MEDICINE has always been glad to act as the mouthpiece for physicians who desired to send a message to their colleagues in practice. We have cheerfully accepted pen-written manuscrips and letters where it had not been feasible to typewrite articles or letters. We have even given careful consideration to communications written with pencil, although we confess that that was not always done with perfect good grace. We have to be careful of our eyes, you know, and these are strained seriously.

Now, then, while we do not want to close the door against pen-written letters and articles, where this is the only method by which communications can be prepared, we do want to ask our contributors, as much as possible, to typewrite their contributions.

This is of importance, especially in the case of the leading articles. In any case, it goes without saying that manuscripts submitted for publication should be written on one side of the paper only. Further, it is highly desirable that the typewriting should be done double spaced.

Single-spaced typewriting has to be copied just as much as pen-written or pencil-written manuscript. It is impossible to copy-edit and otherwise prepare for the printer a manuscript that is closely typed.

It is only human and quite natural that manuscripts that are presented typewritten (double space) and also those neatly pen-written, and that are as free as possible from corrections and erasures, are accorded more immediate attention than are those that strain the eyes and the patience of the Editor, because of careless, unclean, slipshod writing.

Our contributors, whose communications we value, can help us greatly by keeping this reasonable request in mind.

We do not mean to have it inferred that we refuse to consider pen-written or pencilled communications. That would not be fair because, despite the ever-increasing popularity of the typewriter, there still are many medical men who do not own one.

Moreover, such a course would be ungracious; for we have found many valuable pointers, many pure-gold nuggets in pencil written notes. However, these are a severe strain on the eyes. They must be copied before they can be sent to the printer, and, that costs money; also, it causes delay.

Therefore, whenever possible, please use the typewriter, double space, or at least pen and ink; and write on one side of the sheet only.

It may serve as a comfort to us in all our calamities and afflictions that he that loses anything and gets wisdom by it is a gainer by the loss.—L'Estrange.

ABOUT FEE SPLITTING

The *California State Journal of Medicine*, for November last, contains an editorial on the subject of fee splitting which might well be taken to heart. The principles voiced in this editorial seem to us eminently proper and we do not believe that we need add anything to what the editorial writer has said.

There is a growing confusion and not a little misunderstanding in the minds of many physicians regarding "fee splitting." The evidence seems to indicate a certain amount of definite encouragement of both, the confusion and the misunderstanding.

The Principles of Ethics very specifically and quite properly condemn the secret division of a fee. It is also unprofessional to give or receive a commission. In other words, it is degrading and unprofessional for a physician to be a party to any transaction that permits payment for anything except for services rendered to the patient. On the other hand, each and every physician actually rendering service to any patient is entitled to share in whatever compensation is available for the composite service. The "Principles of Ethics" specifically provide for this situation in the latter part of Section 3 of Article VI:

"It is also unprofessional to divide a fee for medical advice or surgical treatment, unless the patient or his next friend is fully informed as to the terms of the transaction. The patient should be made to realize that a proper fee should be paid the family physician for the service he renders in determining the surgical or medical treatment suited to the condition, and in advising concerning those best qualified to render any special service that may be required by the patient."

This section provides quite definitely for divisions of a fee, protects the family physician in charge of the patient, and the patient or person who pays the bill. It quite definitely provides that the patient must be fully informed of the arrangements for the division of the fee among all those who have served, and intimates with sufficient clarity that the family physician should assume a responsible role in such transactions.

There is nothing that is confusing or difficult to understand in our ethics. They condemn *secrecy* in the apportionment of earned fees; condemn the payment of fees from any person to any other person by rebate, commission, or in any other manner for any purpose, except professional services rendered, and they provide a perfectly clear method by which each and every physician rendering service may have his earned share of whatever funds are available for the purpose.

With these facts before the profession, there is nothing surprising in the growing resentment that is being expressed against any person or organization that condemns the proper division of fees in accordance with the expressed ethics. The actions of some few, who have been attributing virtue to themselves by keeping the whole fee, where service has been rendered by more than one physician, under close analysis are found to be in violation of the letter and spirit of our published ethics and their policy open to the criticism of fundamental selfishness.

INFORMATION WANTED

This caption might also be written with a question mark, that is, "Do you want information?"

It is a fact, admitted by most of us, that little can be accomplished without organization and cooperation. There was founded, some ten years ago, an association of which we have heard very little but which has accomplished much for the doctor who, in the legitimate practice of his profession, has had to fight inimical legislation on the one hand, and the invasion of an army of drugless healers on the other. In the face of countless obstacles, the doctor has held his own, but, he is still fighting for the privileges and prestige to which he is entitled.

The organization we refer to is not a medical society; yet, its interests are all with the medical profession. We refer to The American Pharmaceutical Manufacturers' Association, founded ten years ago.

The medical profession can hardly realize the vast amount of good this association has accomplished in fighting legislation, both national and local, which was unjust to physicians and destructive to the growth of better pharmaceutical methods.

In addition to the effective legislative work in defense of the doctors' rights, much has been accomplished in the way of laboratory efficiency, better manufacturing methods, and the elimination of waste, all of which has indirectly benefited the doctor in his combat against disease—and, therefore, the patient.

There are other larger organizations which have been active in the medical field. The doctor is acquainted with these and with their work. However, there is an opportunity for the physician to become better acquainted with the American Pharmaceutical Manufacturers' Association and to make use of its various committees. In turn, the association wants information from individual doctors as to the problems which confront them in their local fields, as well as from the medical profession as a whole.

If you are cognizant of any legislation pending in your state which, in your opinion, does not give the doctor a square deal, it will pay you to pass the information on to the American Pharmaceutical Manufacturers' Association. If there is any information that you desire in the field of manufacturing pharmacy, you will be served efficiently on request. If you have any suggestions to offer, they will be gladly received and promptly attended to at the headquarters of the association, 32 Liberty St., New York City.

It is not so much the being exempt from faults, as the having overcome them, that is an advantage to us.—Alexander Pope.

GIVING DIGITALIS

The Southern Medical Journal for August contains a very remarkable article on chronic myocarditis and its management, which was presented by Prof. Henry A. Christian of Boston, Massachusetts, before the section on medicine at the fourteenth annual meeting of the Southern Medical Association in November, 1920. In the course of his remarks, Doctor Christian makes the following statement:

"I have never experienced any difficulty in obtaining satisfactory digitalis effects from the simplest possible form of digitalis, untreated powdered leaves made into pills, provided the leaves are potent. To find this out, you need but to test them on one of your cardiac patients. If you get good results, ask your druggist to dispense that leaf to your patients until his supply gives out and, when he gets a new supply of digitalis, to send you a sample to test before you allow him to fill your digitalis prescriptions. In this simple way you can test for yourself the potency of the digitalis you use and form your own estimate of the proper dosage to get results. Local cooperation in this matter between fellow practitioners would be of great value; the digitalis tested by one will give the same results for all when given in the same dosage."

Undoubtedly, this method suggested by Doctor Christian to secure adequate digitalis effects from powdered leaves is very serviceable—where it is feasible. The difficulty is only in the fact that, often, it is all but impossible to secure leaves of sufficient potency and also of sufficient purity that may be used in that manner. It strikes us that the general practitioner and his patients are served far better by depending upon the product of a manufacturing chemist's establishment of known integrity and honesty. The advantages for such a procedure lie in the fact that manufacturing chemists employ competent pharmacologists who determine the purity of the crude digitalis leaves that they purchase. Then they determine their physiological action and standardize the product in accordance with definitely established principles.

For that reason, a certain digitalis preparation, that is to say, a brand of digitalis or the product of a given firm, may be depended upon to be uniform. It does not require repeated tests, it may be accepted as having the same physiologic action today and next month and next year.

However, it is quite thinkable and, in fact, it happens that the products of different firms differ somewhat in their standardization. The careful physician will therefore select one digitalis preparation and will, in the future, procure that particular product for his clinical use. Here especially it does not pay to change from one brand to another. Once a certain preparation has "made good," the wise practitioner will stick to it.

Leading Articles

Human Readjustment as the Prime Resource for Clinical Reestablishment

Memoranda of Resources for Meeting Clinical Conditions Without Drugs and With No or Little Apparatus, at Any Time and Place, and Through Orthokinetics or Some Modality of Motion

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EDITORIAL COMMENT.—While we are witnessing, today, a "cautious revival of drug therapy," as has been stated recently by a certain brilliant clinician, the period of therapeutic nihilism, of general distrust in the old therapeutic methods has produced the eminently salutary result of extending and expanding our therapeutic resources enormously. In opposition to the almost purely chemical action of remedies internally and parenterally administered, the physical modes of action of mechanotherapeutics and physiotherapeutics in the broadest acceptation of the term open up possibilities that our understanding hardly can encompass—as yet. There is an enormous field calling for investigation, for study. Dr. Taylor's instructive article is bound to stimulate us to energetic and enthusiastic endeavor along the lines pointed out by him.

THE most promising and remunerative therapeutic procedure lies in restoring harmony to disordered organisms through readjusting disordered human mechanisms. The service is personal, supervisory and is becoming appreciated as radical and economic.

These vital mechanisms are not isolated but complementary, each an essential part of a unity, mind and body being a continuum, structure and function acting and interacting from any one area to each and every other part and cell.

Since motion precedes consciousness from the earliest manifestations of life, so can the harmonies of livingness be restored best, perhaps only, by regulating structure as the necessary prerequisite of reestablishment of function, whether cellular or cerebral.

However valuable, even imperatively needed, certain drugs or chemicals be, or their medical congeners introduced into the body for the purpose of repairing disturbances in the defense and repair forces, they can by no means compare (except in the case of specifics for infections) in safety, in completeness and permanency with a reharmonizing through forces exerted upon or through the gross mechanisms by agencies applied to the disordered structures and supplemented by consciously controlled motor performances.

Among the special reasons for sustaining this contention are these: By means of suitable modalities of motion and devices to apply motivation (always excepting certain high-power electric and special ray devices) little or no harm, no serious or permanent damage, has been done. Quite otherwise is it with powerful drugs or anesthetics which often produce fatalities. Normal organisms, stimulated by such external forces as are applied for healing purposes, are in such masterful poise that they readily and promptly regain balance even after severe stress, so soon as the agency influencing them is removed—unless it be a destructive one. Externally exerted forces are not beyond control or com-

pensation, as are drugs introduced into the body or blood stream. They can readily be shifted, modified, transposed, or otherwise compensated or negatived.

As compared with one who depends chiefly on drugs, medicaments, vaccines, bacterins, substances imbibed, absorbed or put into the body, the role of the operator in readjustment is vastly more direct, intimate, reconstructive, all-embracing or unifying. The process also needs more constant personal attention and application. He thus can promise more, and render and earn more pay; he secures more immediate demonstrable and complete benefits. Patients welcome this economic fact and are willing to stand the extra charge. In their nature, the benefits conferred are not limited to such devious and uncertain actions as are those of most drugs whose energies too often are expended in necessarily restricted directions and degrees. Of course, nothing can supplant the exact use of certain specific medicaments. Drugs as a group, however, may and often do fail of what is predicted of them and fall far short of restoring the organism to normality, as do the biokinetic remedies.

In solving every-day clinical riddles, it helps to look at and appraise the living organism from a mechanistic standpoint or the angle of biophysics. Man is the greatest living transformer of matter and energy. A living being thus becomes a current of mobile matter and of energy, both of which change from moment to moment while moving throughout the organism. There is also the characteristic form of energy which undergoes change in shape, contour, density, elasticity, irritability, and the like attributes (or functions), and it is the significance of the changes which interest the clinician from the standpoint of regulation.

Life processes are influenced compellingly by light, by mechanical pressure, by the chemical changes induced by stimuli, from environmental conditions, many being not yet fully understood but all of which involve the manifestations of motion.

Oscillation between action and reaction is cited as the main characteristic of life. Motion is now known to exist in the inanimate as well as the animate world. The motivities of life differ among themselves enough to warrant specialized studies as to the changes of potential into kinetic energy; also the readjustment of life forces and structures, as means for correction, through some form of motion; in short, through orthokinetics.

Motion thus comes to deserve the fullest consideration in each and every one of the changing aspects of life, as cause, manifestation, explanation, effect, and means of regulation and repair.

Energy Content

The position or point of view here assumed is that, in each normal human being, there reside inherent energies more than sufficient to serve all needs till the final decline and normal ending, provided these energies are made and kept in available form and condition to meet all exigencies, and to discharge all obligations when applied advantageously.

These life energies are manifested in: growth forces, body defenses, self-regulative mechanisms, "factors of safety in the animal economy," and are herein later cited or briefly described as to their bearings on topics of conservation, restoration and reconstruction, the living body being a mass of biodynamics which can be regulated and elaborated only as a series of biokinetic manifestations. The function of movement, active (kinesia), passive or negative (rest, or akinesia) enters into the theme at every point affording evidence as to problems and is also the chief means for relief or restoration.

In the Appraisement of the Individual We Reckon With:

Types of Men: Patterns or conformations or make-ups, designs, protoplasts, relative norms, similarities of inherence, radicals, distinguishing characteristics, qualities, constitutional adequacy or inadequacy, temperaments, common denominators, externals and internals, features, and also peculiarities, normalcies, classifications, and the like.

These types of men or action patterns are to be appraised also in respect to individual variants from the standpoint of the status of beginnings or endings, their genesis or fruition, through primary strains or developmental trends, completeness or incompleteness, status of physical or mental adequacy, whether at par (or relative norm) above par or below par, and in accord with their design, constitutional peculiarities, susceptibilities, vulnerabilities, idiocyncrasies, or "diatheses."

At all times must be considered the mental or emotional or psychogenic status or plane of development, of stability, adapta-

bility to environment, to meet changing situations, motives, degrees of voluntariness; also of emotivity, feelings, in short as to how the individual dominates the environment, or is dominated by the environment.

Also, it must be determined as to what extent the whole, or the individual as a unit, affects the part, or the part dominates the whole of the individual. In short here we have proportionate integration, degrees of endurance, of dynamics, of hardihood, of variations of sensitiveness, of adaptability, or abnormality. From this status can then be inferred the index of reactiveness to stimuli from without or arising from within; also of morale or plane of behavior, variations in the coefficient of emotional stability, devotion, courage, fortitude, generosity, self-abnegation, loyalty, and the like finer or spiritual qualities.

Likewise, the status of body chemistry, metabolism, the power for dominance of the great regulative mechanisms, the ductless glands, their over- or underaction, also the effects of excess action or pressure (stress) confusing the governing mechanisms, hence the status of resistance to shock, to toxemias, hence a coefficient of oxidation, of exhaustion states, constituting structural alterations making for readjustment, mental or physical or both.

Degrees and Directions in Which the Part Disordered Dominates the Whole

The potentialities of personality, the organism as a primary entity as contrasted with those whereby the organic or secondary entity is capable of dominating local conditions. Proportional integration, e. g., painful or vulnerable states may induce dysfunction or impaired action, e. g., of a limb, hysteroidal paresis, or of a part which may be so painful, so deformed, impaired, or injured, as to dominate the organism as a whole. This domination may be mental or physical or both.

Environmental Influences and Their Effects

Euthenics or favorable conditions or those caused by accidents of circumstance capable of producing beneficent or depreciatory modifications in structure and function; among which are previous conditions of life, habits, tastes, training, dietetics, nutrition effects of pre-existing influences, of morbific states or diseases, e. g., metabolic, such as are affected by anomalies in biochemistry.

Also as instrumental causes, the status of reflex arcs or circuits, the reflex as the unit of nervous function, of action, reaction, interaction, also degrees and forms of disturbability, and of regaining poise in the reflex circuits when disturbed.

Negative or Hypoplastic Phases of Energy Content

Constitutional or individual inferiority, retarded involution, devolution versus evolution, producing social inefficients, not necessarily mental deficients or unfits, but rather psychogenic misfits, or subfits (subnormal or abnormal). Individuals of less than 50% normal, chiefly physical (somatic) but also likely to be mentally below par, at least temporarily.

Status of Systemic, Enzymatic or Constitutional Disabilities, of Metabolism, of Disturbances Shown in Biochemistry, the sum of the chemical changes within the body, or within any single cell of the body, by which the protoplasm is either renewed or changed, enabled to perform general or special functions, or whether it be suitably prepared for appropriation or excretion. Here we have variants in constitutional competence.

Fundamental Adaptative Agencies

Among those to be considered briefly and referred to specialists in those departments of energetics, are: (a) mechanistic, (b) thermogenic, (c) electrogenic, (d) photogenic, or heat and light combined, (e) chemogenic, (f) radiogenic, (g) electronogenic (see researches of Albert Abrams), (h) (possibly) spectrochromogenic (see new ideas of Dr. Dinshah P. Ghadiali).

Among the many mechanistic agencies or devices applicable to repair of structural anomalies, are:

Regulation of gravity, ponderability, hydrostatics, pneumatics, through support, fixation, local immobilization, traction, suspension, torsion, pressure, counterpressure, compression, separation, impacts, concussion in short adaptabilities to influences exerted upon the whole or the part, the parts being replaced in positions of advantage to function, or released from positions of disadvantage.

Devices for traction, suspension, support, immobilization, local rest; for the application of, or relief from, torsion, or compression or drag, weight bearing, or separation, etc.

Among Thermogenic Agencies Are:

Devices for enhancing or retarding latent heat-making or heat-eliminating energies,

including volition, psychogenic regulation of temperature; also by exercise (actuation); external application of heat and cold; also manipulative modifications, subdermal traction (which induces excellent skin roboration similar to Bier's suction hyperemia in respect to thermogenesis), by constriction or "damming back" of blood and lymph; also the enhancement of inherent heat making powers, and the role of trypsin.

The degree of temperature is a most important feature of ferment action. The digestive ferments are highly sensitive to changes in temperature, they all acting most energetically at slightly above that of the body, as in active exercise or a mild reaction hyperemia, or fever. Digestion is enhanced by an increase in quantity of enzyme and also by an increase in temperature from 98.4 to 104° F. (37 to 40° C.) at which temperature the proteid is very rapidly dissolved by the trypsin. Sajous says:

"When we recall that Metchnikoff found that it was a trypsin which destroyed bacteria in his phagocytic leucocytes, we cannot but admit that there is a striking coincidence between the febrile state and the temperature at which a germ-destroying ferment is very active. This suggests that we are dealing in this connection with an important feature of pathology.

"The evidence available shows that it is to an exacerbation of the heat liberated by a continuous reaction between the phosphorus-laden nucleo-proteid and the oxygen of the adrenoxidase that the augmentation of heat energy which endows ferments with increased activity should be ascribed.

"The composition of the pancreatic juice is as follows: the normal product of the pancreas, the zymogen or mother substance trypsinogen; adrenoxidase—a substance now known as 'secretin'; and nucleo-proteid; trypsin is formed when trypsinogen combines with enterokinase, a body composed of adrenoxidase and nucleo-proteid; trypsin causes hydrolytic cleavage of proteids; and its proteolytic activity is due to the intrinsic heat energy its oxygen-laden adrenoxidase and its phosphorus-laden nucleo-proteid liberate when combined." (Sajous, "Internal Secretions", Vol. II, pages 857; 860; 862.)

Among the photogenic agencies through light alone, or by modifications of light through colors, through the visible spectrum and the extra spectral rays, also light and heat combined, are:

Heliotherapy Direct Light and Heat From the Sun

Radiant sun energy is transformed by plants into chemical energy which, in turn, feeds the vital activity of animals who return it to the external world in the form of heat, work, muscular contraction, electricity. Man is a mammal, not a plant, hence is hypersensitive to excessive heat quite as much as to excessive cold. Note variants in racial types and climatic susceptibilities in relation to endurance and survival.

In another communication, it is proposed to elaborate this outline of photo-thermogenics and to include kineto-dynamics or the availability of voluntary powers of movement, in active or passive phases, as motion versus rest, etc. (See paper by author "The Resources of Systematized Rest, Isolation and Forced Feeding," *N. Y. Medical Times,* Nov., 1921; also: "Rest and Work, Weariness and Recreation," *N. Y. Medical Times,* May, 1919; also: "The Essence of the Rest Cure," *Monthly Cyclopedia and Medical Bulletin.*)

The Enterprise of Regulating the Heat-Making (Thermogenic) Mechanisms

Raising or lowering the coefficient of temperature is of fundamental efficacy, since the action of trypsin (op. cit.) is only potent when the body temperature is at a certain favorable level. This can be accomplished with excellent satisfaction with such simple devices as are available in any household, merely a moderate ingenuity and resourcefulness being employed. Heat and heat energy are generated in the body, are derived from oxidation of foods and measured by calories—mainly from carbohydrates and fats. The combustion or oxidation of pabulum is not direct in the body, as in a furnace, but occurs as a process of disassimilation under influence of special ferments, enzymes, which operate under control of nerves, reflex activities and nerve centers; and it is regulated by the ductless glands. Heat is the result of tearing down molecules and their reappearance, in the form of molecular vibration, of the energy which was previously employed in holding the molecules together in the organized state.

Individuals differ much in their capacity for thermogenesis, least in the very young and in the very old—most of those in the full tide of vigor and in those of hypothyroid, ruddy, plump, sturdy, make-up (Percheron, or carnivorous type); good in the highly energetic hyperthyroid or over-engined man; poorest in the asthenic, the constitutionally inadequate. Divergencies or oscillations in heat-making occur as a fea-

ture in loss of vigor, e. g., in those convalescing from disease or injury, the temperature being notably low in states of fibromyositis, in chronic gout, in diabetes, and in tuberculosis, except when the infection "becomes lit up" in a frantic effort of nature to put over repairs.

The importance of supplying external or artificial heat is well known but too often overlooked; hence, a review of simple heat-affording devices is of use. Therefore, the topic of Balneotherapy deserves review and will be succinctly supplied later, such as can be used in any home.

Cold, while one is inactive, produces worse effects than when active, hence one must devise means for relief through activities when possible. Cold plus moisture is worst of all, as in the case of men in trenches with feet in the wet. In the absence of artificial heat, brisk skin friction is always possible and often suffices. If one is too weak or ill, or injured, or shocked, then subdermal traction done by another is most valuable, the full equivalent to Bier's suction cups. Especially readjusting the heat generation is subdermal traction over the abdomen, and this is of value wherever the digestive power has long been disordered or lowered, as in chronic digestive impairment. The hot bath, the hot pack, are familiar resources. Hot bricks over which is poured alcohol, wrapped up and placed about the body, are superior to hot bottles of water. So of subdermal traction over the back to stimulate spinal centers. A valued patient and friend of mine had a moderate nephritis and was warned to be careful of chilling. He was in Florida one winter and, after a long trip in an open car, got chilled to the bone. He wired me the facts, being unable to find means of heating, so I wired back: "Get into a hot bath," which probably saved his life.

Cold applied when needed is of great use for pain in such affections as pleurisy, pneumonia, neuralgia, sciatica, etc. Freezing upon spinal centers by ethyl chloride, followed by ether, for five minutes, is valuable in obscure, local painful states; also for making a profound impression on the spinal reflexes whereby nutritive (trophic) reactions are promptly awakened and which relieve many obstinate and puzzling disorders.

Cold locally increases secretory activity, especially of HCl and gastric juices, it dilates the vessels, inviting blood to the part. A cold bath increases elimination of urea, uric acid, ammonia, earthy phosphates, xanthin bases and total nitrogen. In short, socalled tonic brief applications of cold have the effect of stimulating the processes of tissue change to a high degree.

Brief applications of cold stimulate the skin glands and sweating, they contract the mass of the kidneys and are followed by dilatation and increased functional activity, elimination of CO_2 and hence of absorption oxygen, raises heat-making by rousing latent readaptative mechanisms. If cold be too long maintained, the powers of reaction, of colonification, etc., are depressed.

Thermogenic Devices

Balneotherapy, hydrotherapy, hydrology, the use of water as a peculiarly convenient and adjustable instrument of heat and cold, e. g., baths, sprays, impacts, wet compresses, drip sheets, packs, etc. The neutral immersion bath at 95° F. or more, for twenty minutes, is of peculiar efficacy in chronic hypertension of body and of mind; is most soothing, quieting, sleep inducing, especially in states of mental disease accompanied by excitement.

Heliotherapy: Exposure to the sun outdoors or in a room by open window; baths in dry sand that is heated by the sun rays; the action, local or general, of direct sun heat or through mediate transference is extraordinarily curative in bone tuberculosis, in many effects of inflammation, as in arthritism from pneumonia and other infections.

Contrasts of hot and cold water tend to induce vasomotor shocks and to rouse lowered sensitiveness or impaired function. Alternations of hot and cold water, either still or through currents, the "whirling bath," rouses notably conditions of stagnation, impasses in vitality, after shocks, injuries, wounds, etc. They are valuable for inducing vasomotor action and reaction—through agencies or instrumentalities to enhance or retard blood and lymph propulsion, to induce vasoconstriction or dilatation, hyperemia, or anemia; notably in areas of lowered vitality, e. g., bed sores, hypostatic pneumonia, sluggish wounds, old stumps, septic or traumatic arthritis, etc.

A powerful means of influencing blood movement is rapid oscillation in vasomotor innervation and heat hyperemia production, as by Bier's hyperemia, "Stauungs (damming back) hyperemia," also compression

by tourniquet, by suction through dry cups, by traction, etc. Bier has elaborated this into a carefully organized system.

Another powerful agency of blood distribution, reflex excitation and local heat raising, is subdermal traction (op. cit.); a seizing of the dermal and subdermal structures and pulling them away from the denser structures, thus releasing vascular compressions, minor adhesions, and expediting hydraulic action in the blood vessels and lymph channels which are particularly numerous there. In order to secure fuller traction on, e. g., scar tissue, place Z.-O. plaster over the part. One can then seize and pull on the adherent surfaces. Also Tyrnauer's superheated air, dry heat up to 300° F.

Hot flat iron, applied to back areas along the erector-spinæ muscles, i. e., heat with pressure; use thick dry cloth on the bare skin, lift when too hot, keep iron in motion and avoid too-sudden repetitions in the same place. Use a moist cloth in fever to secure sweating. By this means, the temperature can be lowered several degrees.

Agencies for Producing Effects of Cold

Freezing by ethyl chloride or ether spray, solid CO_2 stick, etc., in beginning or threatened suppuration to check it, or if developed, to aid resolution. Cold applied dry or moist; in the form of ice bag or a box; through moist cold or ice packs, etc. Freezing (op. cit.) has been shown by Abrams to powerfully arouse reflexly disordered spinal centers, if it is applied for ten minutes over certain vertebrae.

Manipulation Along With Muscle Reeducation an Immense Resource in Diverse Disordered Conditions

Repair of localized maladjustments by manipulation is valuable in variations in muscle tension, overtension, undertension, constituting loss of balance, as shown in: pareses, followed immediately by muscle training through guiding voluntary tension and relaxation, by encouraging motor performance in accuracies.

In contractures, adhesions, spasmodic areas or structures, treatment of local areas and associated structures, begin by consciously forcing the part in the direction in which it is contractured, and against slight resistance, then reverse quickly. Thus better confidence and control is secured, latent power enhanced, reflex circuits educated, control secured, harmonies in movement restored.

In tremors, motor irregularities or oscillations of push and pull, which occur temporarily or as evidence of emotional stress, shock, fright, terror, also more persistently in acute disease or spinal center deprssion, in paralysis agitans, in senility, etc. The cure, when possible, is in restoring the equilibrium in the motor centers and the most forceful and radical means is muscle training.

System Disorders or Disharmonies Among Organ Groups, Irritabilities, Imbalances

These in the main depend on: (a) endocrinous fluctuations, (b) disorders of the nervous supply (autonomic), and (c) inequation between secretion and elimination, (d) local lowering of energy, restoring mechanisms.

There are manifested in vasomotor imbalances, cardiovascular-renal, blood or pulse or venous pressure. (See paper by author: "Cardio-Vascular-Renal Regulation," *Boston Medical and Surgical Journal*, Oct. 9, 1919.) Also respiratory impasses. (See article by author: "Chest and Trunk Reciprocities.") Genitourinary system; loss of bladder control, enuresis, bed wetting of children, controlled by impacts, manipulation, also by subdermal traction over lower lumbar and sacral outlets.

The normal body state is represented by a perfectly balanced condition of muscle (kinetic less by static) constantly changing yet always the same within narrow limits, the arithmetical means of opposing forces may become unstable and get into an impasse. The chief dependence is on poise in the ductless glands; also on the varied status of the automatic nervous system.

The efferent autonomic system is made up of: (1) an outflow of fibers through the third, seventh, ninth, and tenth cranial nerves called the cranial autonomics; (2) an outflow through the anterior roots and white rami of the first dorsal to the fourth lumbar segments, spoken of as the thoracic abdominal autonomic or sympathetic; (3) an outflow from the sacral segments through the pelvic nerves termed the sacral autonomic. The craniosacral autonomic outflow is antagonistic in function to the thoracic abdominal or sympathetic system, and overaction of the one or underaction of the other causes an impasse and a disturbance to the organism.

(To Be Concluded.)

Blood-Pressure From a Practical Standpoint

By J. HENRY DOWD, Buffalo, New York

BLOOD pressure still seems to be an absorbing topic and, although it is looked on as a very important factor in persons after fifty years of age, its importance depends entirely upon the remote cause.

We have been taught, and many still adhere to the same teachings, that a high blood pressure means great danger to the patient; they are liable to die at any moment from apoplexy.

Now we read in the *Journal of the American Medical Association* (May 17, 1919) in an article from the pen of Major Dana, Chief Cardio-vascular examiner during the late war, a man that made over 60,000 examinations, the following: "The more I study blood pressure, the less sure I become convinced of any accepted interpretation of the test."

How often have we seen very high pressure, yet, neither apoplexy or death resulted! How often have we seen these high pressures reduced to a normal state, simply by regulating some intestinal condition and through the quieting of the nervous system!

If the arteries were fully dilated, the heart could not maintain the circulation, and there would be insufficient blood present. Therefore, there must be a control that keeps these structures at a normal caliber all the time.

Normal blood pressure depends upon certain factors that should bear a normal relation to the controlling power of both, heart and vessels. Important among these. we find the amount of blood that is sent into the arteries by the aid of the heart, and the resistance that is offered to the passage of the blood toward the surface through the arteries and capillaries.

Much has been written regarding the bundle of His, some strands of muscular tissue situated in the heart wall, and which, it is claimed, will continue the heart action after the pneumogastric has been severed. That such action is brief and simply due to the electrical conductivity of the muscles, no one can deny; they are experiments and give little or no definite knowledge.

For any structure of the human body to contract and expand, it is necessary that it be composed of elastic muscular tissue. Briefly speaking, the muscular structure of the heart consists of bands of fibers which present an exceedingly intricate interlacement; they are of a deep-red color and marked with transverse striæ.

The blood vessels are composed of three coats, all of which, in part or entirely so, are composed of elastic fibrous muscular tissue.

Blood Pressure Influenced Through Nervous System

That the nervous system is the controlling factor of both, heart and vessels, there is no question. This can be easily proven by observation after the use of such drugs as ergot, camphor, musk, caffeine, etc.; drugs that act primarily on that system (nervous) and raise blood pressure. Or, on the other hand, such drugs as amyl nitrite, aconite, etc., which cause dilation, thus lowering pressure; this is accomplished by temporary paralysis of the ganglionic centers.

But drugs are not the only means of influencing pressure; anything affecting the nervous system and whereby stimulation is produced, will cause contraction of the vessels and a rise in pressure. On the other hand, shock following severe injury, or hemorrhage, will lower it.

A step further. There are other causes that may lessen the lumen of the vessels, thus causing high blood pressure. These are pathological in nature, such as atheroma, arteriosclerosis, endarteritis, and conditions in the kidneys known as Bright's disease. These factors, however, constitute only about 10 to 12 percent of the cases that display high blood pressure.

Other than the named pathological conditions, far be it from the writer to attempt to enumerate the different conditions that may cause a rise in blood pressure. Suffice it to say, however, that they are of a

functional nature and that they raise the pressure reflexly through the nervous system.

It is true, these causes may be of a trivial nature, as is the high pressure due to them. But, as in all other conditions affecting the human system, it may not be wise to allow the high pressure to continue, since pathological changes might develop.

It would, therefore, seem to be a very clear deduction that, after correction of functional conditions, if a high blood pressure persisted, the workings of the neurones should be ascertained. They may be in an irritable or hypersensitive condition.

Facts About High Blood Pressure

Summing up the foregoing, the following conclusions seem most tenable.

1.—High blood pressure is due to a diminished caliber of the blood vessels; by a thickening of their muscular coats or by contraction due to some irritation operating through the nervous system.

2.—The primary cause may be relieved, or entirely removed, and yet pressure continue high. This is accounted for by a hypersensibility or irritation of the nerve cells and may be due to some reflex cause operating either from within or without.

3.—It cannot be definitely stated that the phosphatic index is infallible in registering high blood pressure; but, in a vast proportion of cases, where the precipitate falls quickly and remains above NP (phosphotometer), at the end of ten minutes high bloodpressure is present.

4.—Where a plus index is evident, one thing is very certain: No matter whether the primary cause be Bright's disease, endarteritis or the like, the neurones are in a state of irritation, and the condition is aggravated thereby to a greater or less degree.

5.—With such findings, sedatives are called for; and, as these cases are generally chronic, of long standing, more or less changes may have taken place in the vessel walls or even in the blood (anemia). Therefore, an alterative is a valuable adjunct.

6.—Except in the presence of a causative pathological condition, a very guarded opinion should be given as to high blood pressure; more people have been scared to death by such a diagnosis than have ever died from apoplexy.

7.—Except for the avoidance of certain kinds of food in the pathological conditions, but little or no curtailment of diet is necessary; in fact, the starvation method as used by some physicians is really detrimental.

Study the Neuronic Action

Ascertaining the true condition of neuronic action, so that the condition may be cared for in a scientific manner, is a matter of but a few moments. It is accomplished by a measurement of the alkaline phosphates found in the urine and known as nerve metabolism, or the phosphatic index. This procedure is so well and favorably known that but little time need be occupied in its elucidation.

The second urine passed in the morning must be used, if possible. At this time, the elimination is at its lowest point, and the true condition is shown.

Reading must not take place until the end of ten minutes, and a plus, or index above normal must only be considered as such when the precipitate is in a virtually solid mass.

Cases in Point

Of the following cases, briefly reported, all but one were of long standing; three were of Bright's disease, one was a case of arteriosclerosis:

Dr. W., Feeling of fullness in right side of head, dizziness ending in epistaxis. Examination of urine showed interstitial nephritis. Blood pressure, 250. Phosphatic index, 150% plus. Practically every cardiac valve in a pathological condition. Bromide of gold and arsenic, 10 drops in water, increased 1 drop daily up to 20. In ten days, the pressure was 190; no headache or dizziness; no recurrence of the epistaxis; died of heart disease eight months later. (No effort was made to stop the nose bleed; it was a wise provision of nature to obviate apoplexy.)

Hon. T. S., Interstitial nephritis of 12 or 15 years' standing. Although the heart was not in a very serious condition, breathing had been more or less interfered with for a long time; these attacks bore no relation to food or time of day; but, accompanying them there was a great accumulation of gas. Nitrite of amyl gave relief; the use of this was quickly followed by marked eructations of gas. Blood pressure was 180, and this had been his only consolation doled out by physicians for two or three years past. The phosphatic index registered 175% plus. He was placed on the bromide of gold and arsenic mixture in the same doses. At the end of four weeks, the index was practically normal; blood pressure about

155; all symptoms had vanished. His wife said that he had not been so well in five years.

Mrs. A., age 57, Interstitial nephritis. For about two years she had suffered from dizziness, flushing of the face, full feeling in the head and more or less headache. During this time, she had been under almost constant treatment, her only solace being the statement, "You have a blood pressure of 190." In consultation, the index was found 150%. The same mode of treatment was ordered as outlined in the foregoing. Improvement was noted in ten days; in six weeks, there was entire relief of all symptoms. Phosphatic index and blood pressure were only slightly above normal. This patient died two and a half years later of heart complications.

Rev. G., age 36, Insomnia, headache and indigestion caused a visit to family physician, who, on finding a blood pressure of 165, counseled him to be very careful, as apoplexy may result at any time. Treatment being of no avail, he was sent to Buffalo to the writer. Careful examination revealed no pathological condition; the index was 40% plus. The same mode of treatment was inaugurated. In three weeks, his physician reported to me, "Feeling perfectly well, blood pressure 140, index normal." (On the strength of the bad prognosis given by the physician, this gentleman had resigned his position as rector of a church.)

Mrs. A., age 80. Dizziness, constant tingling of left side of body, face flushed, slight headache. Careful examination showed kidneys to be in a normal condition; heart normal; in fact, no pathological condition was evident anywhere. Phosphatic index was 150% plus; blood pressure, 210. Treatment, as outlined, relieved her in about ten days to two weeks. After three weeks the index was 30% plus, the blood pressure 160 (not bad for her age). Several members of her family had died of apoplexy; yet, this lady is now alive in California, seven years afterwards. She has written to say that the old symptoms never returned.

Miss B., age 34. Following an attack of intestinal toxemia, marked nervousness developed, in many ways resembling some of those just mentioned. No pathological condition was shown by the urinary examination. Phosphatic index 175%; blood pressure, 190. The condition being acute (2 or 3 days), the bromide of sodium in elixir valerianate of ammonia brought almost immediate relief; in thirty-six hours, all symptoms had vanished. Blood pressure and phosphatic index were normal.

C. J. H., age 61. Interstitial nephritis of long standing. Seeing him in consultation, the following was revealed: 14 ounces of urine in 24 hours, urea, 0.005 (a most serious condition to be in). Blood pressure, 120; arteries atheromatous (the man had been a steady and confirmed drinker for years). Phosphatic index, 90% minus; crystals indicated very marked nerve-cell starvation. Nitroglycerine, 1/100 gr., hypodermically at once, to increase the urea output and also the amount of urine. A mixture of phosphorus and nux vomica was ordered as an artificial food for the impoverished nerve cells. (Always give phosphorus in milk and at least half an hour after meals.)

In three days, this man was passing about 40 ounces of urine; said he felt quite well. He did well for about six or eight weeks when, after the free use of liquor, he became unconscious and died of uremia. In this case, the urea output, plus the nerve-cell starvation might have been used as sources of information as to how such a case would end.

The Blood-Pressure Bugaboo

By JOHN J. A. O'REILLY, Brooklyn, New York

WHETHER a man imagines that he has blood pressure, or has been so informed by a doctor, it spells Despair! He may know perfectly well that, while all steak is meat, all meat is not necessarily steak; but he can not dissociate from himself and his blood pressure the fact that somehow, someday, somewhere, sometime, he heard of someone who had blood pressure and who had a "stroke" and was para-

lyzed and lived for years a "lame duck" dependent upon others, and the picture takes all the fight out of him. It is the unknown danger that brings out the yellow streak in a man who would face a known danger with courage and fortitude. Let us strip blood pressure of a little of its mystery and see what it really is, how it really may occur, and what the man in the street should know so that he may take steps to arrest its progress, if present, or prevent its development.

It is man's arteries which are involved in the manifestation of blood pressure, so man should know that an artery is a tube through which the blood flows from the heart to nourish the tissues and to provide the chemical elements, derived from the food, water and air, with which those tissues may, by constructive chemistry, keep body functions active; and, by destructive chemistry, dispose of the tissue waste of the body. Because of the necessity for the irreducible minimum of friction, the inner lining of an artery is the most delicate tissue you could imagine, of gossamer fineness, which is surrounded by, or enclosed in, a casing of muscles, every tiny bundle of which is hitched up to its neighbors by a purely passive tissue which we call white fibrous tissue. I want to get that word "passive" firmly fixed in your minds as pertaining to a tissue which has no active function but is merely designed to connect things, like the non-contractile, non-extensible piece of string on a boy's sling-shot which hitches the forked stick to the rubber bands and the rubber bands, in turn, to the piece of leather which holds the pebble until the extended rubber bands contract and shoot it to its mark. The very passiveness of that tissue makes it a convenient place where to stick away the body waste that it may be inconvenient to eliminate, precisely as there is a closet, in your house and mine, which is a catch-all and is used as such because it has no really active place in the daily management of the home, like, for instance, the clothes' closet, or the dish closet.

Now you must understand that the current of blood rushing through the arteries of the body can not possibly nourish the structure of the artery, but must go to its destination, the tissues, leaving the artery to be nourished by some other means. You remember that doggerel:

"Great fleas have little fleas upon their backs, to bite 'em
And little fleas have smaller fleas, and so on ad infinitum"

Just paraphrase that:

"Great arteries have little arteries upon their backs to feed 'em;
And little arteries have smaller arteries, and so on, ad infinitum"

and remember that it is the blood passing through these nutrient arteries with which we are very much concerned, because upon its quantity and quality depends the ability of the artery to do its proper work in a proper way and to continue, not merely to passively convey the blood to the tissues but to actively contract, to supplement the force of the heart, precisely as a runner in a relay race receives the impulse from one and hands it on to the other. To accomplish this, the muscle must maintain its tone by renewing its strength from the nourishment brought to it by those nutrient arteries and by preventing the accumulation of waste within its structure. But, you must remember that however zealous the artery may be to maintain its integrity, however careful it may be to dispose of its own waste, it will be handicapped if the blood supply to its own structure, coming to it through those little, nutrient arteries, is insufficient in quantity or poor in quality by reason of the presence of something of a poisonous nature within the blood, whether that poison be chemical or biological in origin, or whether there be a physical obstruction or a climatic change in density of the fluid.

Blood Perversion and its Cause

If I speak to you of a tight bandage around your arm, you understand clearly the physical interference with blood-nutrition; if I speak of blood-poisoning, you have a fairly clear idea of a biological agent at work; and you have your own way of expressing the condition where somebody's blood is "too thin" to withstand the cold of winter or "too thick" to stand the heat of summer.

When I speak of the chemical poisoning of blood, it is apt to be a little vague until I recall to your mind the fatalities from inhaling ammonia gas or from working at phosphorus; but, when I speak of the poisoning of your blood from the foul material manufactured in a neglected, constipated bowel, or from the poisons created by the retention of your own body-meat,

"that is something else again" as they say in "Potash and Perlmutter." Yet, it is this very poisonous material, generated within your own body, that I want to direct your attention to as the primary cause of the change in the structure of an arterial wall which robs it of its resiliency and makes it more difficult for the heart to drive the blood through, thus increasing the pressure required to overcome the resistance.

What would happen if you left a lot of garbage in the kitchen sink? It would break down and not only be offensive as to smell but would be repulsive to look at; would it not? Well, that is precisely the condition within the colon, the large bowel, when the undigested and partly digested food waste is left to accumulate or to move on sluggishly. It is the duty of the colon bacilli to keep the legitimate waste "mushy" and on the move; but, those bacilli are very much like ourselves, they will neglect their duty and take up their pleasures among the undigested and partly digested particles, releasing gases which distend the intestines and make pressure along the line of least resistance, namely, up against the heart and lungs, embarrassing the heart for space and diminishing the capacity of the chest and the ability of the lungs to get their full meed of fresh air or to get rid of the impure gases of the body's destructive chemistry.

Not only that, but these colon bacilli have to eat to live, and they must digest, and they must get rid of their own wastes; you throw your waste into the city's sewers, but the colon bacillius throws its waste into you! And, in order to save you from being swamped by those toxins, the blood rushes down to the colon to neutralize and oxidize and render inert these chemical poisons. But, remember, you can not have a Battle of the Marne, and win it, without losing some soldiers; and you can not have the battle of the colon and win it without losing some of the red cells of the blood which have to do the oxidizing and neutralizing of those poisons. This means a diminished quantity of red blood cells and a consequent diminution in the (quantity) oxidizing power of the blood with a resulting impairment of the destructive chemistry of the body and the retention of a lot of waste-product salts which must be deposited somewhere. Now, what likelier place is there than this passive inert, white fibrous tissue whose only work is to connect things and whose distribution is ubiquitous, since there is not a structure in the body, from the tiniest, downiest hair to the coarsest bone, that is not made up of individual particles, each group united with the other, by means of this very white fibrous tissue which you can recognize as a tendon (or sinew) but which the microscope reveals to us as part and parcel of every tissue and organ of the whole body?

Waste Products Cause Irritation

These waste-product salts are as foreign to the tissues as is the bullet in an old soldier's leg and they are equally as capable of causing irritation, whether the place of their deposit is a muscle, a joint, or a tendon, the sheath or covering of a nerve, or the fibrous (outside) coat of an artery. This irritation means inflammation with a consequent thickening of the tissue involved and a loss of the normal power of that part, so that the joints are apt to be stiff, the muscles tender, the nerves oversensitive, and the arteries less resilient because the muscular coats of those arteries are not only irritated by the salt deposit in the fibrous sheath surrounding them but the very muscle structure itself is invaded and irritated and inflamed and thickened. Therefore, the heart, driving the blood into such arteries, finds a greater resistance and considerably less help from the greater rigidity and decreased contractility of the muscle layer and the heart must use greater pressure to overcome that resistance and the greater pressure means strain upon the heart. This pressure is measurable in terms of millimeters of a column of mercury or tension of a steel spring—but, it matters not, to the patient, how it is measured if his pressure is beyond the normal.

What is the Remedy?

That is the disease. What is the remedy? Obviously, there is none that does not include a reorganization of the body-chemistry and the removal of the cause. Touring in an automobile, we may take the wrong fork of a road and, recognizing the error, cut across country until we strike the right fork. In the operation of the laws of nature, there are no short cuts. If you are on the wrong fork, you must back-track until you strike the main road; then start fresh and go right. You must try to understand what this oxidation of dead body-

tissue means and what you must do to restore and maintain its integrity. You must know that every tissue in the body is made up of individual particles, called cells, precisely as a brick wall is made up of individual bricks, each as important as the other, and all going to form a wall which has the functions of surrounding an enclosure, supporting a roof and admitting light and air through openings; that it is penetrated by firm, strong, galvanized pipes (arteries) and soft lead pipes (veins), and electric light, telephone and telegraph wires (nerves), thus forming an organ. These individual cells are like human beings in this—that they are born, have a time for development and growth, take up their life work, reproduce their kind and die. When they die, they are dead meat and must be destroyed or they will create a pestilence; the destroying agent is the red cell of the blood and its contained oxygen and those red cells can not do two things at one time any more than we can. If we overload the economy, for example, with candy or rich pastry which requires a lot of oxidation to change the sugar into an alcohol and ether, etc., for ready absorption by the blood and application to the body as nutriment, or if, by reason of neglect of the bowels or inefficient food digestion and the retention of a large amount of food waste which is being converted into liquid poisons by the activity of the colon bacilli, there is a demand for the services of the red cell with its contained oxygen; then those red cells must apologize to the dying cells of the body and say to them:

"I am sorry; I would like to oxidize you, burn you up, and convert you into a gas, called urea, and throw you out of this person's body as a gas by way of the kidneys; but, unfortunately, he has just eaten a mess of sticky candy or he is developing a lot of liquid poisons in his large bowel which threaten his safety and I must rush down there and fight the immediate danger. I will oxidize you, however, to the formation of a salt and, because your presence, as a salt, in the blood current would render it syrupy, you will be thrown out of the blood current and deposited in the passive, white fibrous tissue of joints, muscles, until the threatening danger passes and I can complete the work of oxidation, tomorrow."

Tomorrow's story is the same as today's, and next week's is the same as tomorrow's, and more and more of these waste-product salts are deposited, more and more of these promissory notes are issued until a rheumatism (or, acidosis—call it what you will; the pain is the same to the victim) or a persistent tonsillitis or a beginning Riggs' Disease (pyorrhea) or a maddening scalp headache or a disturbing sense of dizziness drives him to a doctor who has to inform him that, apart from the symptoms which bother the patient, there is a degree of blood pressure which demands attention.

Your common sense ought to tell you that you may take cathartics till the cows come home and all they will do will be, to empty the waste bin, and that you will gradually grow used to them so that you will have to take more and more and more, or change to a more powerful one. Your doctor will tell you that, from the point where stomach ends and large intestine begins, is about twenty-six feet, a foot for every letter of the alphabet; that, if the Creator intended the digestion in the small intestine to be accomplished by the two fluids, bile and pancreatic juice, He would not have wasted energy in making a tube 26 feet long, but would have made another pouch like the stomach, and tucked it away comfortably. It must have been intended that the small intestine should be like a freight railroad twenty-six miles long, for instance: a station for every letter of the alphabet. Just imagine a freight train laden with food-stuff coming down the line and finding two no-account freight handlers, "bile and pancreatin" at Station A, whose inefficiency embarrasses the ultimate consumers (tissues) by failing to digest off a box of choice melons consigned to Station A and interferes with the efficiency of the freight agents along the whole line. When that freight train reaches Station Z and passes into the terminal freight yard, there should be nothing in that train but legitimate waste—empty barrels, and boxes, broken crates, excelsior, paper and twine. In that terminal freight yard (your colon), there are some cleaners-up (colon bacilli) whose duty it is to clear out the waste and get rid of it; these cleaners-up are apt to neglect their duty and indulge their pleasure in the neglected box of choice melons, precisely as the colon bacilli are apt to neglect their duty to keep the legitimate

food waste on the move until it can be evacuated, and enjoy the pleasure of the undigested and partly digested particles flowing in from the small intestine, in the course of which banquet gases are released which make pressure up against the diaphragm and embarrass heart and lung action while liquid poisons are generated which must be fought by the oxidizing power of red blood cells. Familiar, is it not? right back to the beginning of the vicious cycle with which we began this explanation of bad body chemistry.

What to Do

First, you must consider the "raw material" that comes into your factory and not have an excess of sweets, for instance; or meats or starches—but, for goodness' sake, do not "go on a diet." Your digestive organs were given you to be your servants, not your masters. Do not abuse them, to be sure; but, do not toady them either. Eat all kinds and classes of food in moderation, so that your meals will be plentiful and varied. Whip up the lazy freight handlers, bile and pancreatin, by the use of some simple cholagogue, or bile-stimulant, like phosphate of soda, preferably the plain, a teaspoonful in hot water, before breakfast; then, about two hours afterward, use a simple cathartic, like a 3-grain or 5-grain cascara tablet and keep that up until you have three movements a day. Two are sufficient; the third is a message to you, from your large bowel informing you that conditions are improved and suggesting that you continue your phosphate of soda but decrease the cathartic to one tablet every other day, etc., being always guided by the advent of a third movement until you are becoming so adjusted that a cathartic once a week is sufficient. Then decrease the phosphate of soda, the same way. In the meantime, you will have been increasing the percentage of nourishment and decreasing the percentage of waste and, thus, relieving the blood supply of the intoxication from the colon and, also, the necessity for fighting such toxins and neglecting its legitimate business. Then the blood supply, finding itself able to accomplish the work of each day with a little energy to spare, will not waste that energy but will set about redeeming those promissory notes that have been deposited in the tissues, and you may be sure that those highly important arteries will not be neglected in the work of reconstruction.

So, take this little story of Preventive Medicine as an antidote to the educated ignorance of blood pressure which robs you of hope and blinds you to the fact that Nature is far kinder to us than we deserve and that she will go out of her way to reconstruct us in our anatomy, physiology and chemistry, if we will but stop and realize that we are on the wrong fork of the road, if we will then back-track in good faith to the main road and start fresh.

A Suggestion for the Treatment of Pellagra*

By J. W. McCREADY, M. D., New York City

THE successful treatment of gastrointestinal diseases by the use of the chlorine compound, chlorazene, leads me to believe that this drug may be of service in the treatment of pellagra, since this is a disease of "maize" or other poisoning. As chlorazene is not in general use as an internal remedy, I will give a brief history of this chlorine compound.

Chlorazene, or sodium toluene p-sulphon chloraminem[1], was made first by Chataway[2]. It was introduced by Dakin[3] as a surgical disinfectant. It is a white crystalline powder with a chlorine-like odor. It was used with great success during the European war in badly infected wounds, irrigation of the bladder, and other internal cavities, but I think that it is of even more value as an internal remedy. It is decomposed by the secretion of the stomach. This makes it necessary to protect it from the action of the gastric juice while it passes through the stomach. The duodenal juice, rich in

*Reprinted, by permission, from the *Medical Record* for September 3, 1921.

bile and pancreatin, decomposes chlorazene slowly, and this liberation of a small quantity of free chlorine causes a prolonged oxidizing action[4]. We know that, since the days of Bouchard, we have been compelled to utilize feebly soluble disinfectants as intestinal antiseptics, in order that their action may be prolonged during the time necessary for this dissolution; but it is not easy to engage chlorazene in insoluble combination capable of fulfilling this purpose. During my first experiments, three years ago, I tried many combinations, both in solution and powder; some appeared to be compatible, but more were incompatible; until at last I decided upon willow-charcoal whose power of absorbing various substances is well known. A powder consisting of chlorazene and willow-charcoal is inodorous and remains so even after exposure to the air and light for a long time.

In the presence of gastric and duodenal juice, decomposition, with liberation of small amounts of chlorine, does not occur until after two hours. This decomposition continues for twenty-four hours[4]. It was by accident rather than by experiment, three years ago, that I first used this drug internally, but with such good results that I have ever since used it and I have employed it with charcoal in hundreds of cases as an internal remedy without any ill effects. When given in capsule, it may produce a slight burning sensation, but ordinarily patients suffering from gastric or intestinal disorders experience no trouble after the administration of several consecutive doses. Thus, then we may, without fear, prescribe chlorazene in capsules, even for the patient having a sensitive digestive tract. I would not advise its use in powder form, as it is rather a hot dose to swallow, even with a glass of water; still it can be taken that way if the patient can not swallow a capsule. My first patient to take the medicine in powder form told me that he was obliged to take as much water, as a chaser to get the powder down, as he did with a drink of the poor whisky they are selling today; another patient told me that she took the powder without any inconvenience in a spoonful of jam. However, I would advise the chlorazene and charcoal put up in capsules or cachets.

Indications for Chlorazene Internally

I have prescribed it with success in gastric and intestinal diseases, whether acute or chronic. In summer diarrhea and dysentery, it promptly disinfects, deodorizes, and diminishes the number of stools. The drug is indicated in ptomaine poisoning and autoinfection; and I have found it to give relief during any such diseases.

The dose is from 1/5 to 3 grains. One third grain with charcoal (10 grains) in a capsule is a large enough dose in the average case and should be given not more frequently than every three hours. In gastrointestinal indigestion, one capsule after each meal is enough. I am firmly convinced that chlorazene will destroy germs in the intestinal tract, whether there by diarrhea or constipation. When influenza is complicated with intestinal indigestion, the drug is indicated and acts well.

Importance of Enough Oxygen

Fresh-air treatment is another factor which must play an important part in any disease, but I have found that patients will sometimes die of oxygen starvation even in the open, if not given a richer mixture of oxygen than they can get from the air. The air we breathe is at best but one-fifth oxygen and, if a patient is very weak from any disease, his supply is diminished in proportion to his weakness. There is a respiration beyond the lungs, in fact, the entire body is a respiratory apparatus, and all of the tissues and organs of the body are constantly reaching for oxygen, and if the lungs can not supply the required amount, the tissues of the body begin to grow weak from oxygen insufficiency and at last die from oxygen starvation.

For the past twenty years, I have always used oxygen in any disease where there is weakness and depression. As a cardiac tonic, there is nothing better (Sir Douglas Powell[5]). The direct effect, of its inhalation, on the heart is, to send more richly oxygenated blood to the left cavities and muscular walls. Oxygen should be used *early* in any disease and not as a measure of last resort. In my opinion oxygen is the most valuable therapeutic agent in medicine. No chemical element enters so extensively into vital processes as oxygen. Its inhalation acts by supplying a deficient necessity of life.

Apply to Pellagra

I have had no personal experience in the

treatment of pellagra, but, from what I have studied of the disease, it appears to be one of the gastrointestinal tract with diarrhea as one of the most important and distressing symptoms.

"Pellagra is the result of chronic poisoning from the consumption of spoiled maize, the corn containing within itself some toxic principle. So far as I have been able to observe from a considerable experience, no drug may be said to exert any decided influence over maize poisoning." (Harris[6]). There is a difference of opinion, however, as to the origin of the disease.

Still, I know of a certainty that oxygen, if given liberally, will be of marked value in pellagra or in any other disease where the vital forces are interfered with. As to chlorazene, I can only hope.

My successful treatment of gastrointestinal diseases with this chlorine compounds leads me to believe it will be useful also in pellagra.

It is my sincere hope that some of my southern brethren of the medical profession will take an active interest in the use of chlorazene and oxygen in pellagra for the relief of suffering humanity.

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Jean Paul Marat, M. D., Physician, Scientist, Revolutionist

Sketch of a Little-Known Period of Activity of this Celebrated Character

By W. F. von ZELINSKI, Ph. G., Sc. B., M. D., Camp Meade, Maryland
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[*Continued from January Issue, page 17*]

On the Nature of Fire

PERHAPS the most important or, at least, the work which demonstrated Marat's research capacities to their best advantage was his investigation into the nature of fire. If, as has been remarked by a well known physicist, his conclusions fell often beside the truth, it was due to the difficulty of the subject rather than to lack of ability and application. Space and time do not permit an analysis of these experiments, interesting as they are. Suffice it to say that the results of these investigations were submitted to the Academy of Sciences of Paris. Although that august assembly did not come to any conclusions in the matter, it advised that the experiments be continued. That the demonstrations conducted before the Academy were impressive, may be adduced from the following excerpts of remarks made by those who passed judgment on the work. "He has furnished a means by which a great field of new research has been opened in the domain of physics," "His experiments have been well made and well demonstrated;" and again, "This clever physician has opened a vista altogether new by a method of which he is the inventor and which he has employed with great success." This has reference to a solar microscope and dark chamber.

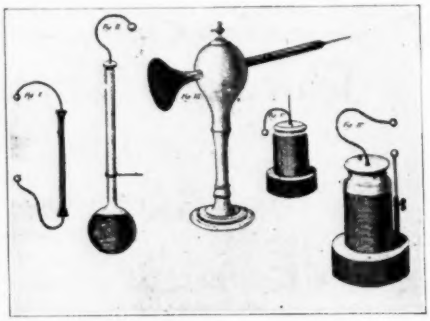
Marat's thesis was based on the opinion, or belief, that fire was an ignited fluid, and his experiments were intended to verify this theory. Many scientific men of the day, including our own Benjamin Franklin, became interested and witnessed the experiments. Franklin remarked on the cleverness of Marat as an experimenter. However, in spite of most determined efforts, Marat failed to have his work honored by the Academy, there being opposition by a certain few which was powerful enough to deny him the coveted honor. Finally, whether through sheer malice or to prove to himself that it was the man and not the work that was of most importance, Marat induced the grammarian Beauzée, who was secretary and interpreter to the King's brother, to sign a translation of Newton's Principles of Optics, of which Marat was

the author and which had failed to receive the stamp of approval by the Academy. This work was dedicated to the King and obtained the success which had previously been denied it. The honor went to Beauzée who was then himself a member of the Academy. From this time on, there was considerable bitterness between not only Marat and the Academicians but other scientific men of the times as well. This became more and more manifest and brought about a great deal of controversy. Finally, it led to an open attack by Marat in which he denied that the Academy possesed the necessary competence to recognize real merit. He states "A man of genius need not seek recognition of such an assembly because he disdains intrigue and mistrusts the judgment of a coterie." At another time, he wrote: "The Academy has met 11,409 times, has published 308 eulogies and has given 3,956 recommendations. These include pommades for the hair, plasters for corns, ointments for the itch, toupets, syringes, canules and a thousand other objects of equal importance." Lavoisier, the great chemist, he called the putative father of all rumored discoveries.

Overdrawn, no doubt, is much of what he says, but certainly more than a grain of truth lies in it all. With all this dispute and the many charges and countercharges of every nature, it is difficult to determine with any degree of exactness Marat's standing as a scientific investigator in his own country and in his own times; and especially how much injustice he suffered at the hands of his contemporaries in France.

Studies in Electricity

Opposition seemed only to stimulate Marat in his efforts and undoubtedly converted a healthy pride into morbid vanity. There followed a prodigious number of experiments in the field of physics and, having now definitely broken with the Paris Academy, he competed for prizes offered by various scientific bodies in other parts of France—not without occasional success. Most notable was his work on electricity in which his equipment merited serious consideration. In this connection, he was extensively quoted and his name cited together with those of Boyle, Priestly, Cavendish and others of like standing. The Academy of Berlin made a very glowing report on his "Researches in Electricity" and a translation of this work into German was done by Weigel, Professor at the University of Greifswald. In Holland, Van Swieten, a well-known philosopher, cited Marat a number of times in a book on "Electricity and Magnetism." Lamark, the naturalist, accepted his views without question. Scientists from Leipzig and Stockholm made special voyages to assist in his experiments. In Switzerland, an enthusiastic review of his works was published in the *Journal Helvétique*. Finally, celebrities of no less a note than Franklin and Goethe noticed and praised his labors in this field. In 1783, Marat published a memoir on medical



Electrical instruments made by Marat, from an illustration of his work, "Researches on Electricity."

electricity which was crowned by the Royal Academy of Science, Arts & Belles Lettres of Rouen. The work is divided into three parts: (1) The diseases in which electrical treatment is indicated; (2) The mode of administration; and (3) Its value. In his introductory, he states "One will not find in this work any hypotheses and uncertain experiments nor doubtful principles. It is facts alone, but facts simple and constant from which I have reasoned out my deductions."

As a sample of good advice, the following impresses me as being quite to the point. "One must not treat cases except those in which the diagnosis is well established and those conditions in which the disease does not terminate by some natural crises. It is not sufficient to know how to turn the handle of an electric machine, but necessary to know the mechanism of what one is employing as well."

That Marat's labors must have brought

him into prominence in other countries may be further attested by the fact that he was invited to carry on his work under the patronage of Royalty at the court of Russia. This offer was refused because of the rigors of the climate and the difficulties of travel. Invitations were also received to make demonstrations before a scientific body in London. At one time, Marat made plans and had the highest hopes of settling in Spain where he expected to become the head of the Royal Academy of Sciences. Negotiations with this end in view were carried on between himself and the Court through his friend Saint-Laurent. These negotiations came to naught, however, which was the occasion of keen disappointment to Marat.

Pretensions to Nobility

Without pretending to have given more than the briefest outline of Marat's activities along scientific lines, I will pass on to more general remarks concerning his career tending in my opinion to add pertinent information to our study. There is circumstantial evidence, and I give it for what it may be worth, that, during the time Marat was Physician to the Guards, he made a tentative effort to establish his rights to a patent of nobility. A Heraldic Review published a coat of arms attributed to him; it was said to be quite faulty in design. Apropos of this, is the following letter in the possession of a former princess Bonaparte: "Have you received my letter? If so, I hope you will not refuse my Coat of Arms, seeing that the nobility of my family is assured in Spain as well as in France. The post which I occupy at present and which is merited by the confidence accorded me by his Lordship places the affair in the interest of society. It is honorable for the state that the origin of a servitor of Princes be established by certain signs such as I would be able to furnish." This letter is signed "J. P. Mara, called Marat." The name of person to whom this letter was addressed does not appear, nor does the date, this part having evidently been torn off. The letter is presumed to have been written to an official who passed judgment on such applications. The date is difficult to determine. A revision of the list of the nobility was made in 1788. Marat had resigned his position as Physician to the Guards in 1783, and his name does not appear in the Royal Almanac later than 1786 at which time his successor was named. It is true that Marat's name was Mara, he having added the final t to give it a more pronounced French sound. Aside from this, the only other evidence which might lend color to the idea of his noble aspirations are some writings by him in which he stated, that the person of the Prince is sacred and inviolable; but, as may well be imagined, this must have been very early in his life.

Marat Not Without Gentle Feelings

Marat is generally credited as having had a violent temper and, certainly, judging from his writings, such a conclusion would be logical. Still, in his early years, it may be just possible that a literary style was mistaken for a disposition. There is testimony from not a few who knew him personally and who speak of his geniality, erudition and taste. As to his brutality and lack of sentiment, we may note the following, a letter dated August 23, 1781:

> "My sensitiveness, my dear Comte, does not permit me to assist at the opening of the corpse of a friend. I shall be represented tomorrow by M. Boyer, Master of Surgery, who will work on the cadaver. He is a very experienced practitioner; he lives at rue de Bourgogne two doors from me at the house of Mme Vernier. I pray you to invite him tomorrow and to mention the hour. It is a favor which I expect from your friendship.
>
> Tuesday evening.
>
> (Signed) Marat.

It is not until after the Revolution that Marat becomes the mountebank, dog-leech and bloodthirsty monster such as Carlyle and some others make him out. Perhaps, Fabre d'Englatine, who knew Marat personally, points toward the truth of the matter. "Everybody speaks of Marat according to their own ideas, ... the result is not a portrait but a caricature, not a sketch but a daub." Personally, I am inclined to agree with Paul La Croix when he states, in his introduction to one of Marat's works, there were two Marats, the Marat whom all the world knows the other Marat whose existence is hardly suspected. This one was the admirer and disciple of Rousseau, lover of nature and scientist, the author of many discoveries in chemistry worthy of a Newton, the energetic and hectic writer, the author of scientific, philosophic and literary works and Physician to the Guards of the Comte d'Artois.

He disappeared near the end of the year

1789 to take unto himself his homonyme "The Friend of the People."

A note on Marat's religious views may not be amiss. It is generally supposed that he was an atheist; yet, in one of his attacks on the Academicians, he exclaimed, "They have formed the horrible project to destroy all religious orders and to annihilate religion itself." His Essay on Man is frankly materialistic. Probably the truth of the matter is that he was a deist which one of his biographers claims to be the case; for, in 1774, while in London, he became a member of an organization of Free Masons, and, unless the Masons of that day differed from those of the present, it may be assumed that at least at that time Marat gave some sort of assent to a theological system and belief in a divinity.

Marat's Ill Health

We come now to the period of Marat's life shortly preceding and leading to his death, not in the hope of adding anything to what is perhaps already well known, but because it is believed to be of interest from a scientific standpoint. Marat was the victim of a pruritus, the cause of which has never been clearly established, nor is there any competent testimony which will give us anything more than a clew. Syphilis has been advanced as a diagnosis by many, but this seems based on nothing more than the statement that he had a 'loathsome disease.' He was said to have suffered frightfully from his affliction which became greatly aggravated during his miserable existence in the Paris sewers, where he had taken refuge to escape capture by the famous La-Fayette and his Guards. This subterranean existence he led for some months; yet, he continued to issue his pamphlets and papers and these papers, by their increasingly violent denunciations of his enemies, were a practical index to the aggravation in his sufferings. He also, at this time, was subject to headaches which caused him to cover his head with a handkerchief soaked in vinegar, and it is thus covered that we see him in many of his caricatures. He was said to be repugnant to look at and ferocious in his manner, and it was at this time that he gained another famous sobriquet, "The Darling of the Scum of Paris." The hunt for him having been finally abandoned; he again appeared in the light of day and, now, with great prestige and powerful influence. A notice in his paper, now called the *Publiciste Parisien*, states: "Perhaps some will come to see the dictator Marat. They will find him in his bed, a poor devil who would give his all on this earth for a few days of health, but always occupied a hundred fold more by the unhappiness of the people than by his own illness." He finally contrived to gain some surcease from his torment by means of a bath, which he found very effective in lessening his misery. Here he spent the greater part of his time, his arms and chest free and a board placed midway across the tub serving as a writing table.

Charlotte Corday

In this improvised arrangement, he was destined to end his days. On July 13, 1793,

Marie, Anne, Charlotte, Corday d'Armans
née en 1768; jugée par le tribunal révolutionnaire
le 17 juillet 1793; décapitée le même jour
Dessiné au naturel, dans son costume au
tribunal révolutionnaire par Hauer.

Portrait of Charlotte Corday in the Museum of Caen Normandy. Said to be a most authentic likeness.

Charlotte Corday, after several vain attempts, managed to gain admittance to the great demagogue's apartment; it was about 7:30 in the evening and it was not without difficulty that she was able to see him in person. She was engaged in a lively colloquy with Marat's mistress in regards to the importance of her alleged errand, while Marat was in his tub examining an ac-

count for some printing. He was able to hear the noise of the conversation going on in the antechamber and called to Simone Evrard (his mistress) to learn the reason for this. On receiving an explanation, he ordered that the young person who so strongly insisted on seeing him be admitted. Charlotte was permitted to enter the bath room and here she found Marat as already indicated. She seated herself on a chair alongside the tub and engaged in conversation regarding political matters; many names were mentioned and these were noted by Marat in writing. Meanwhile, Simone had retired from the room to fetch Marat some accustomed refreshment. It has been said that she had a presentiment of impending disaster. No doubt, this must have been a more or less constant thought in her mind; nevertheless, she closed the door between herself and the bath room. The concluding words of the conversation, as uttered by Marat, were said to have been, "It is well, I shall soon have them guillotined at Paris." Following this, was a cry, Come to me my dear friend; Come to me! The self appointed mission of assassination had been accomplished.

The climax was all that could be desired from a dramatic standpoint. The death blow was delivered with certainty and unerringly; the victim did not survive it above a few seconds. Exactly what followed after this, is variously recorded. In one place, it is noted that Charlotte Corday was rendered senseless by a blow on the head, from a chair in the hands of one of Marat's friends who chanced to be in the apartment at about the time his cries were given. Needless to speak of the scene that followed, the apartment was soon filled with the ever present curious. At the first investigation on the spot, an eye witness relates that Charlotte Corday was calm and unmoved. She stated in a firm voice to those gathered about, 'Have no fear gentlemen, no one will accuse you. It is I who killed him."

The day following the assassination, in the afternoon, an autopsy was performed by the Chief Surgeon of the Charity Hospital, Louis Deschamps. A true copy of this protocol is still in existence. The following is free translation:

Report of Necrocpsy

1. External examination.—I observe at the superior and anterior surface of the chest, near the sternum on the right side, a transverse wound, slightly oblique, about six lines in length. The surrounding parts are blood stained.

2. On opening the abdomen, I observe an adhesion of a portion of the intestine with the peritoneum; for the rest, all the parts in that locality are in a healthy state.

3. I examine the viscera contained in the chest. I note that the right lung is adherent to the pleura throughout its external surface. The pericardium is opened, it is filled with a quantity of coagulated blood; the aorta near the beginning of its curvature has been pierced through and through, at the lateral wall is a pouch quite close to the apparent origin at the heart. The left auricular appendage has been penetrated near its base; the right lung is a trifle pale, its superior extremity was pierced throughout its thickness. All the wounds are transverse. The left lung appears to be in its natural state.

The results of my observation are, that a piercing, cutting instrument directed from before backward, from right to left and from above downward, entered the chest; in the course which the instrument followed it entered the chest between the first and second ribs, traversed the superior part of the right lung as well as the aorta and entered the left article of the heart.

4. On opening the cranium, I have found the cerebrum and cerebellum in their natural state.

Done at Paris on the said day and year and signed at the present proces-verbal.

Deschamps.

In Conclusion

Of Marat being accorded the honors of the Pantheon and the final disposition of his remains in the drains of Paris, some months later, little need be said here; it is described with a wealth of detail in other places. Nor will I hazard an analysis of Marat's mental status, the difficulties for any but a trained psychiatrist and historian are more than ordinary. Of one thing I am convinced; the actions of an individual who plays any considerable part in an affair such as the French Revolution can rarely form a basis for study of his previous mental state. We know the mind of man to be a fragile mechanism, the marionettes that perform on the stage of history can rarely resist the forces that make them act. Environment and circumstances are hard masters. No one can say with certainty what his conduct would be if placed in the position of those whose actions they endeavor to criticize. I recall the words of Gibbon, that historian of historians. "There are few observers who possess a clear and comprehensive view of

the revolutions of society; and who are capable of discovering the nice and secret springs of action which impel in the same uniform direction the blind and capricious passions of a multitude of individuals."

In conclusion: I have endeavored to present an unprejudiced account of a historical character, more infamous probably than otherwise, but, yet, on account of his one-time activity in our profession, a subject worthy of our interest. It is possible, there are some inaccuracies. However, as most of the material from which this article has been gathered is printed in a foreign language, and being a dilletante in matters historical, I plead this as my excuse.

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Memoirs of the World War

By DR. GUSTAVUS M. BLECH, Chicago, Illinois

[*Continued from January Issue, page 33*]

CHAPTER III

On to France!

WHATEVER anxiety had existed in the minds of many of the officers about the war being fought out without the assistance of the 33rd Dvision, all worry ceased when it became definitely known that the Dvision was to proceed overseas before the end of April, 1918.

The 108th Engineers (Col. Henry A. Allen) left our camp on April 23rd. There were no bands, no handshakings, no farewells, except possibly in some of the Houston houses where maidens of sunny Texas promised to wait for youths of windy Chicago.

The entire division was scheduled to leave towards the last of the month. Headquarters were to occupy a train, but most of the higher officers traveled by ordinary passenger trains. I, too, secured permission to choose my own pleasure and in that way I had opportunity to stop at St. Louis and Chicago to attend to some personal matters.

I arrived at Camp Upton, on May 2nd, and was the first officer of the Division on the ground. As my baggage had not yet arrived, I had to borrow a cot and blankets from other officers. I made myself useful by arranging a list of the officers of headquarters and by assisting the billeting officer in the assignment of rooms. The rooms were just large enough to hold a bed, a small table, a chair or two and our trunks, provided they were placed one over another. Most officers above the rank of captain had four trunks, each weighing seventy-five pounds, and a bedding roll weighing about eighty or ninety pounds—thus coming within the allowance of four hundred pounds.

An Officer's Outfit

What was in those trunks? The man who would go to the trouble of publishing a list of the contents of the trunks of, say, fifty majors or colonels, would prove a benefactor to officers about to undertake a voyage for overseas duty.

In my youth, I had been in France. Eight years ago, I was in France again. Of course, I knew that it rained more in France than in any other European country, and I knew that the winters can become even more disagreeable than in cold climates, because the moisture was more penetrating. Still, I did not think it neccessary to prepare myself for an artic expedition.

There was an official list which had to be complied with, and whoever got up that list ought to be sued for damages. After I had taken all equipment necessary, I still had an empty trunk. My wife loaded it to the brim with soap, candles, sugar, coffee, tea, folding cups, solid-alcohol cans, and a chafing dish affair. Of all this stuff I gave more than half away and brought the rest back as a souvenir.

General Bell's assignment did not suit me

and I told the billeting officer so. The room was too small. "But, that's all I have;" besides, General M—— of the —th Division had nothing better."

"Well, my dear fellow, there is some difference between General Bell and General M——. I would suggest, and in fact request, that you throw the stove out of the mess hall in the end of the barrack, put in a decent table, a few chairs and whatever equipment you can steal, beg, or borrow, and then I will not object to your tacking his name card on the door."

The lieutenant, who was a typical "Nuoorker," loked at me in amazement.

"Oh, spit it out, or, rather, I'll save you the trouble. We Westerners *are* an impertinent lot."

I got the room and General Bell will now know for the first time that the ten days spent in Camp Upton could have been less comfortable were it not for his inofficial advance agent.

Camp Upton

Camp Upton was the first "cantonment" I have seen in the United States, as throughout my service I saw either camps consisting of canvas or permanent army posts. I utilized my spare time by studying the arrangement of the two-story barrack-buildings, the sanitary measures and equipment, the streets, water-supply, etc.

When one considers that, before the camp was even planned, the land was practically uninhabitable, owing to the tremendous amount of mosquitoes which attacked every human being coming near the underbrush abounding there, one cannot but express admiration for the workmen who actually had to burn their way step by step to be able to live while building military homes for thousands and thousands of troops.

Headquarters of the camp was on a little hill. There was an attractive cottage for the camp commander, and a row of two-story, roughly constructed, wooden shacks, which served as quarters for the permanent camp staff and for division officers of casual divisions. I met a reserve engineer officer, with the rank of major (proof that he was a prominent man in his profession), who plainly told me that, if he could have had the contract for building the camp at one-half the price paid, he could now retire and live in comfort for the rest of his life. This was my first crude shock, which destroyed my illusion that everybody in our glorious country was putting his shoulder to the wheel to "help win the war."

It dawned on me that, while this patriotic sentiment may have actuated the majority of men in uniform, the big firms were making enormous profits. Such things make a man grit his teeth in anger. I asked the major why he did not report his estimate of the cost. The answer was that it would produce no good, since the contractor did not work for glory and the Government doubtless signed the contract in good faith.

"But, where were the Government experts?" I asked.

"You are a very naive sort of person," the major replied with a shrug of the shoulders.

A day or two later, all of headquarters of our division had arrived, but there was absolutely nothing to do for me, as the few routine reports for organizations virtually "en route" were of no concern to me, and even they required but a few minutes attention. We went to New York for recreation, to purchase some extra equipment or, perhaps, just for a dietetic change.

Physical Examination for Overseas Service

Shortly before our departure, a young medical reserve officer came to camp to inspect the troops for venereal diseases. That doctor was so convinced that, without this procedure, the war was already lost, that everybody was disgusted with his manneriisms. I, myself, though accustomed to physical examinations, became red in the face because of the way the highest officers were handled.

When I heard the name of the commanding general called by the young captain, as if he were expecting the general to report to him in the public office, I took him aside and gave him a lecture on military etiquette, which acted like a needle which pricked an air-ballon.

"But, I am doing my duty," the doctor protested feebly.

"Yes, yes. But there is a way of doing duty which betrays the officer and gentleman, and another way, of betraying—let us say—misfit in uniform; and some higher officers have a nasty habit of seeing to it that these men get out of uniform as fast as possible. I presume you like to continue in the service—that's why I spoke to you."

Getting on Board

On May 15, orders came to proceed to

the pier. Baggage was sent away early in the evening. Our train was not to leave until 3:00 a. m., so most officers went to the club house and kept awake enjoying games or just chatting. Some slept in chairs.

We were at the station before 3:00 and entrained with military precision; but with equal military precision the train did not pull out for some time. When we arrived at the ferry, it was broad daylight and thousands of passers-by saw our movement. The ferry was packed with troops. As the clumsy vessel paddled its way through the river, passengers on other ferries waved us farewell. We marched directly from the pier to the steamship—formerly a German liner.

We were too late for breakfast and, having learned that boats do not pull out until after dark, I started for the pier.

An officer stopped me.

"Oh, don't worry I won't change my mind about going to Europe," I said jestingly, "all I want is some breakfast." This was overheard by a naval officer and he indicated that some breakfast would be rigged up for me. I went to the other officers and told them about it. We got breakfast.

The boat was crowded to twice its capacity. The highest staff officers were given sofas as beds. One room, to which the chief of staff was assigned, and not a large one at that, contained three other officers.

I received a very miserable assignment, and, as I was entitled to better quarters by rank, I insisted on my rights. I was given to understand that originally a very nice room was to be mine in association with two other officers, but at the last moment two congressmen came on board and got our room. The commander of the troops himself being crowded, I acquiesced.

The little second-class room containing four bunks was stuffy, so I decided to sleep as little as possible. After dinner, I lay down to sleep. When I awoke, it was about 5:00 o'clock and, as I looked out of the window I saw nothing but water. We were on our way.

A roommate informed me that the captain of the ship had come aboard early in the afternoon, and that we started about an hour ago. I went on deck and just saw the coast disappearing from view. "Good bye, America!"

The heavily laden ship slid through the ocean like a skater on ice. Not a ripple was to be felt. Even when the waves rolled very high, the ship pitched so little that I was not seasick at all, though I am a poor sailor. The trip itself was one of the most enjoyable affairs in my whole experience through the war.

We read, played chess, visited each other, engaged in serious conversation about the aspect of the war, sometimes we poked fun at each other; truly a happy family of boys on a vacation.

Evenings, amusement was provided, the ship carrying a moving-picture apparatus and phonograph for that purpose. The enlisted men had similar afternoon programs, the regimental band on board furnishing excellent music.

In the Danger Zone

As we neared the danger zone, the evening entertainments were stopped. Lights were tabooed from the very beginning. Every enlisted man was ordered to give up his matches, lighters having been provided at different places. Lights were permitted only in an inner room serving as an office, and here, every evening, officers read or played diverse games. There was not a single case of drunkenness during the voyage.

Military duty for most of us consisted of attending "abandon ship" drills. We walked, ate, sat and slept with life preserving belts. When we entered the danger zone, one-pounders were thoroughly inspected and many soldiers and sailors placed on look-out duty. They were looking for submarines, of course, and looking hard. I understand that the man detecting a periscope was to be rewarded.

A short distance from and parallel to us traveled a sister ship. We could see every man on board plainly. I remarked once that it was a good idea to send two ships together because, in the event of being torpedoed, we would not be without assistance. "In that event, that other ship has orders to run like hell," I was enlightened.

A word about the boat drills. The diverse boats and rafts on the steamer were numbered and to each one a number of officers and men were assigned in advance.

Major Chiperfield, who has had experience as a yachtsman, went over the situation after the first drill, and I with another officer was assigned to a raft with him.

At the dinner table, he remarked that

there was not sufficient provision for a real emergency. A high-ranking officer nonchalantly answered that, in the event of a calamity, casualties are naturally to be expected. Major Chiperfield made a sharp reply and for a moment it looked like a serious quarrel, but for a moment only. Later Major Chiperfield requested me to load my automatic and to have it ready for an emergency.

"Gus," he said to me, "we must impress upon the men just this; there will be no crowding, no panic. The first man starting rough-house methods gets a bullet. You and I will go over the rail last." Well, it did not come to a real test, and I was duly grateful.

A day before we reached the French coast, five little submarine-chasers appeared. Like cats chasing mice, they came up, made a sharp turn towards France almost on their own axis and led the procession. The leading boat ran ahead and in all directions, as if sniffing the water lanes for prey.

What a relief to all of us!

I presume it matters little whether a man dies from a shell wound or a submarine torpedo, but human mind has become so accustomed to terra firma as the last resting place that the thought of drowning like a rat filled me with apprehension.

The next noon, the big boat stood still in the harbor of Brest in shallow water. As we entered the harbor, the two French officers who accompanied us stood on deck looking at their country with eyes betraying deep emotion. I could not resist to tell them in French, "It's glorious to see one's country, is it not?"

They grasped my hands.

I thought of the coast in the west thousands of miles away, of the dear ones at home, and my own eyes became a bit misty.

In Brest

The harbor was the scene of energetic activity. I saw little Italian ships, which to me appeared even smaller than a Great Lakes excursion boat, filled with American troops.

What grotesque camouflage paintings these boats had! A riot of color daubed on the walls of the ships in irregular curves. One boat had a small torpedo-boat destroyer painted on its wall. Little motor boats flying the American ensign were lying in the harbor almost everywhere. A motor boat took a number of our officers to the pier, whence we walked to town.

We had the choice of hotels left to ourselves. There were only two, however, to choose from, the Continental, and a French hotel taken over by the Y. M. C. A. As the Continental was filled by the General and his immediate staff, I went to the Y. M. C. A., and secured a room at a comparatively low price.

A Breton maid took my hand baggage and carried it up three flights. I felt uncomfortable to see a woman perform such a task, but I noticed others doing likewise, and even a young lieutenant acquiescing, so I followed her to my room.

Brest is an antiquated, dirty port city. The streets are very narrow. There are many shops. On the streets, all sorts of uniforms can be seen; young American naval officers in blue and gold, each with a French demoiselle on the arm; Turkos, Zouaves, soldiers of the Legion Etrangère, American soldiers, both black and white, stevedores, infantry, hospital corps soldiers, French gendarmerie, German prisoners of war—in short, a medley of international uniforms.

Women, old and young, were in black. Seldom did I see a French woman in ordinary clothes. Food could be had in the hotel restaurant at less cost than I had anticipated. Instead of sugar for our coffee, we were given a bottle with a perforated cork—saccharine in solution.

I went into the street. Several officers approached me and asked me to help them find the cable office. They wished to wire home their safe arrival. I advised them against it for this reason: When we got on the boat, a Red Cross representative presented to each officer and man a franked, printed postal card containing a message of safe arrival. All one had to do was to write the address and fill in signature, rank and organization.

These postals were dropped in bags, to be left in the states, for release of the contents through the mails, the moment the cable reported the safe arrival of the concerned transport. Our families would learn of our arrival in France several days before a cable could reach them.

[To be continued.]

Cancer, Its Cause and Cure

By ALBERT SCHNEIDER, M. D., Ph. D., Lincoln, Nebraska

EDITORIAL COMMENT.—With regard to the primary cause of cancer, actually one man's opinion is as good as another's. Thousands of carefully controlled experiments have been made, numerous case histories and statistics have been analyzed, autopsies without number have been performed, to the minutest histological detail. And, the net result, today, is the surgeon's opinion that cancer is, at first, a circumscribed, localized degenerative disease, treated properly only by excision. Still, the general practitioner and, no less, the public ask: What of the time before tumor-formation? Does the disease spring into existence abruptly with the local lesion? What precedes it? Can it be prevented? These are questions that call for an answer. In how far Dr. Schneider has pointed a true way, we leave to our readers to determine.

EVERYTHING has a definite cause, and cancer is no exception. As to disease, physicians recognize two entirely distinct cause factors. That factor or influence which must be present before the disease can develop is known as the primary or direct cause. Certain factors and influences may, and often do, encourage, stimulate or assist the primary cause, and these influences constitute the secondary causes of the disease. For example, the primary cause of tuberculosis is the *bacillus tuberculosis;* that is, this particular microbe must be present in order that the disease known as tuberculosis may develop. Among the secondary causes of tuberculosis are, close housing, lack of fresh air, low vitality, inclement weather, certain inherited tendencies, etc. No matter how many the secondary causes or how marked in their effects, the disease will not and cannot have its inception until the primary cause becomes active.

Conjecture has long been rife, both as to the primary and secondary causes of cancer. One suggests a lack of vitamines as the cause; another, errors in diet; errors in mode of living; hot foods and drinks, indulgence in coffee, in alcoholic drinks, smoking, eating tomatoes, excessive meat diet, etc., etc. Prolonged tissue irritation, injury to tissues, surgical interference, burns, bruises, the use of irritating spices, and many other things, have been placed in the list of causative agencies; and, yet, how many are there who have been subjected to one or more of these influences without revealing cancer signs at any time?

Statisticians have gathered interesting data as to the range and distribution of cancer, and the deductions which may be drawn from the statistical tabulations shed some light on the secondary causes of cancer. The cancer rate is comparatively low in India, in Japan, in Egypt, in Hungary and Servia. Among the American Indians, the cancer rate appears to be remarkably low. It is suggested that the high degree of skin pigmentation in these races has to do with the low cancer rate. Others are inclined to ascribe it to the deficient food supplies, more especially the sparing meat diet. That the meat diet cannot be the deciding factor is proven by the fact that the American Indian is certainly not sparing in his meat diet, neither as to kind nor as to quality or quantity. Haviland and others point out that the highest cancer rate prevails in low lands watered by rivers which overflow periodically. The Thames and its tributaries traverse an extensive cancer territory. It has also been shown that certain substances tend to induce cancer. Cancer is especially prevalent among the chimney sweeps of England, among workers in tar, and workers in paraffine. Hypodermic injections of paraffine for beautifying purposes have occasionally resulted in cancer and cancerous conditions at the site of injection. Epitheliomas of the hands and of the face are common among farmers. It is only too evident that the cancer rate is higher among high-livers than it is among the poor-livers.

Many investigators have sought the primary cause of cancer in vain. Every division of the lower groups of both the animal and vegetable kingdoms has its representatives which have at one time or another been announced as the primary cause. Bacteria of various kinds, yeasts, molds, protozoa, and even higher organisms have been mentioned as the direct cause of cancer. In every instance, later investigations revealed the flaw in the observation

and the discouraged investigator withdrew his claim to an epoch-making discovery.

Cancer on the Increase

No matter what we may or may not know about the primary and the secondary causes of cancer, one thing is certain, and that is, that cancer is steadily on the increase. For the year 1915, the cancer mortality in the continental United States was over 80,000, and the rate at the close of 1921 will certainly pass the 100,000 mark. We have cause for alarm. It has even been suggested that this dread malady may in time exterminate the entire human race, unless science finds the remedy which will avert such a catastrophe. It is not surprising that a nation-wide, house to house anticancer crusade should be planned. But, no one seems to know just what is to be accomplished by such a campaign. Not even the highest medical authorities appear to have any definite idea how the general public may be instructed so as to protect themselves against cancer, or how sanitary science and medicine are to be of service in such a campaign. Does "right living" protect? Verily not. For it would appear that the very individuals that live right from the standpoint of the sanitarian, the dietitian, and the family physician, show a higher cancer rate, as compared with those who live in poverty and in squalor, the underfed, the inadequately clothed, the neglected. Medical authorities give homely advice to the family physician, urging upon him to watch and study his patient constantly in order that he may ascertain the particular moment when said patient is dipping toward the cancer maelstrom, but it does not mean anything, because almost without exception the "dipping point" has long been passed when the family physician finally admits to himself that his patient actually has cancer. There are no early cancer signs or cancer indicators known to the medical profession and such as are cited and discussed in the medical literature are very largely guess work and mere pretense. The whole cancer literature is a kaleidoscopic, ever varying, grotesque display of well intentioned ignorance. Just at the present time, none but surgeons receive recognition as cancer specialists and their opinions may be summarized as follows:

1. We do not know what the primary cause of cancer is; but we do not believe it to be of parasitic nature.
2. We believe that much can be done to reduce the cancer rate through the early removal of all tumorous growths, whether benign or malignant. All slowly-healing sores or ulcers should be radically treated (excision, cauterization, x-ray and radium treatment).
3. Radium and x-ray treatment in cancer is frequently palliative and in some instances cures have been effected. The improper use of these agencies may do serious harm.
4. Apparently there is no remedial agent (internal medicine) which is effective against cancer. Local application may be used to reduce fetor and for cleansing purposes and, incidentally, to reduce the associated microbial fauna and flora.
5. We advise early complete excision of all cancerous growths. Inoperable cases are to receive x-ray and radium treatment if possible, and any available and applicable palliative treatment.
6. Even when apparently completely excised, cancerous growths are prone to recur.

The Etiological Muddle

The theory of the parasitic origin of cancer is now almost universally opposed by the surgeons, and this despite the fact that as yet no conclusive argument has been presented which would disprove the correctness of such a theory. Very recently, a prominent surgeon in one of our leading colleges of medicine made the following statement at a cancer clinic: "I do not believe that cancer is of parasitic origin. It appears to be epithelial cells gone on a rampage"; certainly anything but a scholarly and convincing statement.

Is cancer inheritable? This question has recently received much attention. Some say, No, quite emphatically. Others suggest that certain family traits and life habits which encourage cancer are handed down from one generation to another. A few declare that cancer is inheritable. Thus, Maud Slye, in a recent number of the *Journal for Cancer Research* takes this stand, stating that cancer is inheritable, that it is recessive according to the Mendelian law, and that it might be almost completely eradicated by always mating cancer with non-cancer.

Is Cancer Transmissible?

The idea that cancer is transmissible from the sick to the well, hence communicable, is slowly but surely gaining ground. It is not admitted to be strongly infectious, but rather indefinitely so, and perhaps largely *via* certain avenues, as, the intestinal tract, the conjunctiva, abrasions and injuries, *via* the circulatory system and the lymphatics. Watch any surgeon who oper-

ates on cancer and you will find that, in every way, he conducts himself as though he were dealing with an infection, and yet he proclaims loudly and vehemently against the idea of the parasitic origin of cancer. The infectiousness may be likened to that of tuberculosis. In cancer infection, age plays an important role, for the susceptibility to this disease represents a definite curve, the zenith being gradually reached at the age of about 60 to 65, after which there is a rather abrupt decline. The great majority of cases occur between the ages of 40 and 70 years. Cancer may, however, occur at any time of life, although it is very rare in the young and in the very old.

The transplantation of sound, non-decomposed human cancer tissue into mice and rats has been done successfully. The technic is the same as for the transplanting of normal tissues from one species of animal into another. Cancer occurs in lower animals, perhaps no race being wholly exempt. Rats, white mice and the higher carnivora have cancer. Cancerous growths occur in the amphibians, notably the frogs. The cancer inoculation tests and experiments have apparently shown negative results in the majority of cases, and this is usually cited as evidence that the disease is not infectious or contagious. In no wise do these negative results disprove the parasitic origin of cancer. If the tests warranted such conclusion, we might with equal justification deny the parasitic origin of malaria and of yellow fever. Fibiger, of Copenhagen, is of the opinion that certain species of nematodes harbor the infection capable of transmitting cancer to rats, and he has actually succeeded in producing cancer anew by feeding healthy rats with the infected nematodes. The group occurrence of cancer in animals (cancer epidemics) has been noted and likewise similar phenomena in humans (cancer houses). These observations point to cancer being a parasitic disease.

Is the cancer situation as discouraging and even hopeless as one might suppose from the preceding? Have all of the facts been disclosed? Is there perhaps after all some hope or a promise? The following is submitted in reply to these queries.

The Author's Conclusions

About one year ago, I carried out a series of experiments which warrant the following deductions as to the cause of cancer:

1.—Cancer, sarcoma and probably also other tumor formations, are caused by plasmodia belonging to the group sporozoa, the same group of organisms to which the malarial organism belongs.

2.—The sexual cycle of the cancer plasmodium takes place in a species of ameba. A preliminary report describing the life history of the cancer plasmodium will appear soon in the *Woman's Medical Journal* to which journal those interested are referred.

3.—The asexual cycle is in part completed in human tissue cells, giving rise to the specific tumor formation.

4.—Infection (human cycle or asexual cycle) apparently takes place *via* the polymorphonuclear eosinophiles, usually at the site of some inflammatory process.

The summary cited in the foregoing will suffice for the present purpose. For a fuller discussion, the original article must be consulted. Further experimentation is now under way, not so much with reference to the more complete working out of the life cycle of the one or more species of tumor plasmodia which may be concerned in cancer, sarcoma, myoma, etc., formation; but, rather, for an attempt to find a reliable and practical test to determine the early existence of cancer, in order that the cure, or cures, for cancer, may be administered in time. Incidentally, attention is being given to a fuller working out of the asexual cycle and the exact mode of human infection. I am only too fully aware of the opposition to the theory of the cause of cancer as thus annunciated. One only need recall Laveran's experience when he first announced his theory as to the cause of malaria. In that case, the period of doubt and of disbelief was of short duration, and, so, let us hope, may the disbelief as to the cause of cancer be of short duration.

So much for the most recent theory concerning the cause of cancer. What can be offered at this time in the way of a cure for cancer?

As to Successful Treatment

Several years ago, Dr. Bertha Van Hoosen, of Chicago, began the use of large doses of emetine hydrochloride in the treatment of cancer, employing this drug because of the idea which she held that cancer was caused by a species of ameba. Emetine is our most efficient amebicide, and, so, Dr. Van Hoosen reasoned, it should prove useful in cancer. The dose is about 5 grains, administered intravenously or hypodermi-

cally, highly diluted (in 150 Cc.) in physiological saline solution and combined with a tonic and stimulating dose of strychnine. Emetine evidently kills the amebal host of the cancer plasmodium, and apparently also the asexual cycle in the human tissue cells. As a result of the drug action, the further progress of the cancerous growth is completely checked. The dead cancer tissue may then be removed surgically or, if inoperable, its elimination from the system and its resorption must be encouraged.

It would appear that emetine hydrochloride in large doses is practically a specific as far as killing the cancer organism is concerned. In advanced and moribund cases, death often follows the treatment, due to toxemia resulting from the absorption of the dead cancer tissue. This makes it clear that the early diagnosis of cancer is of the greatest importance. It is true that emetine in such large doses is not without danger and experiments are now under way trying out other efficient but less toxic amebicides.

To sum up briefly, the present indications are that cancer is of parasitic origin and that it can be cured. Apparently, cancer may be as easily controlled and cured as malaria, yellow fever, and syphilis. The great obstacle to an early control of cancer is presented by modern surgery and scientific skepticism.

Diabetes—A Bacterial Disease

By AMOS T. FISHER, M. D., Kansas City, Missouri

EDITORIAL COMMENT.—It would be a grave mistake to put off the ideas advocated by Dr. Fisher with a casual: "Nothing to it." It is true that leading clinicians and prominent pathologists have not given their approval. Perhaps they would not, if they were asked. Still, what difference does that make? Real worth-while progress does not originate solely with the leaders. The general practitioner may claim a goodly share of credit for it. Somehow, Dr. Fisher's theory—if theory it be—intrigues us. We should like to see it worked out.

IN a paper on this subject, it will not be necessary to take up the complete and comprehensive clinical picture of diabetes. However, I shall at times mention those symptoms which may be necessary to prove my contention that diabetes is a bacterial disease—i. e., a disease due to the bacterial invasion of the organs of metabolism, and others.

Pathology of Diabetes

Consider the pathology of diabetes (Delafield & Prudden). A great variety of lesions are found in the body after death from diabetes, but few aside from those in the pancreas appear to bear any definite relation to diabetes. General debility and malnutrition are common and render the diabetic especially susceptible to injuries and infections. Carbuncles, boils, eczema, etc., are frequent, and they are due to some specific bacteria. Gastrointestinal troubles and circulatory weakness are often present.

The pancreatic lesions are variable. General atrophy with fatty replacement and an increase of interstitial tissue. Hyaline degeneration and fibrosis of the islands of Langerhans are present in many cases. In fact, hyaline degeneration is common. An adenomatous-like hypertrophy of the islands occurs frequently.

MacCallum says:—The nature of this process is not made clear by anatomical study at autopsy for, in many cases, no gross changes can be made out. The blood shows an increase of blood sugar, the liver is devoid of glycogen or nearly so, and the muscles have lost their reserve of glycogen.

Sufficient experimentation and study have been made to indicate rather positively that it is the pathological state of the pancreas to which diabetes is due, and, in any case, there it is where the lesions may be sought.

It is well known that the acinar parts of the pancreas secrete the pancreatic juice into the intestines by way of the pancreatic duct, but that the islands of Langerhans have no direct connection with the duct or intestines. Opie describes a case in which all of the islands of Langerhans were converted into hyaline—inert masses in which living cells could no longer be found. The death of the cells always precedes hyaline degeneration. Often a very fine scarring of the minute structures of the pancreas is found, analogous to cirrhosis of the liver.

So, in the pathology of diabetes, we find conditions which are found in other diseases and which, we know, are due to specific infections. Certain adenomatous conditions, amyloid degenerations, certain conditions found in typhoid fever, tuberculosis, the nephritis of scarlet fever and other similar infections, hyaline débris of cells found in tumors and old granulations, in the thyroid and prostate, and in the pneumonias following influenza and measles. These conditions we know to be due to some specific organism when found in these diseases. Then, why not consider them due to some organism when found in diabetes? I believe that they are, and the results in the cases reported below cause my belief to be quite strong.

Case Histories

Case 1.—Mrs. A. K. W. July 31, 1919. Age 28, married, two children, weight 112 lbs. Emaciated, appetite poor. Had lost weight for over two years. Very nervous and weak. Had typhoid fever, and more or less digestive trouble for three or four years. Urine abundant, sugar abundant. Colon bacillus, diplococcus present in abundance. Put her on VanCott vaccine and gave eight or nine doses.

The patient left Kansas City, and I did not see her for over a year. In that time she had gained 18 lbs. and said that she had had no trouble since her last treatment. In the winter of 1920, she had influenza, while in St. Louis. I saw her in April 1921. Glycosuria had returned and gastrointestinal symptoms were giving some trouble. Treatment was resumed—using a staphylococcus combined vaccine. Pancrobilein was given for the gastrointestinal condition, and with good results. At present, the patient is feeling quite well again and no glycosuria is present.

Case 2.—Miss F. K. Age 25, had the ordinary diseases of childhood. Aug. 1918, was operated on for appendicitis, pus tube, etc. Before she was able to leave the hospital, she acquired influenza which was followed by a severe pneumonia. After leaving the hospital, she failed to recuperate and, when I saw her, Aug. 8th, 1919, she presented a typical picture of diabetes. Glycosuria was marked. Urine and other secretions were loaded with bacteria—colon bacilli staphylococci, influenza bacilli gonococci and other diplococci. She was given a "urethritis combined vaccine" alternating with an "influenza vaccine combined." I also gave her a methylene-blue combination, after a course of calomel with soda. In three months, the glycosuria was gone. The patient had gained 20 lbs. and was steadily employed. A year later, she was still in good health.

Case 3.—Miss F. C. Age 20. Had never had any severe illness until in the fall of 1918, when she had influenza. Sept. 8th, 1919, I found marked leucorrhea, irregular menses, catarrhal nose and throat; weight 109, glycosuria pronounced. This had been present for two or three years, according to her father. Her mother had died of diabetes.

B. coli, M. catarrahalis, staphylococci were abundant. I gave her a course of VanCott vaccine. After four months' treatment, the leucorrhea was much less; the glycosuria was still present, but the patient had gained seven pounds. I then gave her a diet slip and continued the vaccines. In June, 1920, the glycosuria was gone. She did not follow the dietetic orders because these were distasteful to her. Treatment was discontinued for two months, and then resumed for ten doses merely as a safeguard. Since that time, she has been in good health and is about fifteen pounds heavier.

Case 4.—Miss S. S. March 11, 1920. Age 22. Mother died of kidney trouble. She had never had any severe sickness. Gastrointestinal trouble had been rather constant—constipated most of the time. In the last few months, she had become weak, restless and had lost weight. Appetite was poor and she complained of "rheumatic" pains in various parts of the body. Glycosuria was marked, B. coli and staphylococci were present in the urine. She had no leucorrhea as the other cases. I gave Van Cott vaccine, fifteen doses, with pancrobilein. The symptoms cleared up and the patient gained fifteen pounds. In December, 1920, she was well. In the spring of 1921, she married and was in good health.

Case 5.—Mr. E. M. Married, age 38 years; 6 feet 1; weight, 123 pounds. Railroad carpenter. Had the ordinary diseases of childhood. In the fall of 1919, he was in hospital twelve weeks with quite severe influenza-pneumonia. Left the hospital weak and worn, and very much emaciated. Did not recuperate under the usual care and treatment, became deaf and had attacks of blindness. An eye and ear specialist found no ear trouble but referred the patient to

me. I found a few small boils. A great lack of tone marked the whole clinical picture which was typically diabetic. Glycosuria was so marked that the test solution did not need the second boiling—turned orange throughout as soon as the urine was added. The specific gravity was 1042. The evaporated urine was syrupy. B. coli, influenza, and two types of diplococci were present. I gave VanCott vaccine once a week, from March 20, 1920. The patient took up light work on the last of May, 1920. I continued the treatment with short periods of rest to October first, when the glycosuria was gone; the other symptoms had cleared up, and the patient had gained thirty-six pounds. He appeared normal, but I gave him five or six more doses of the vaccines. In February, 1921, he reported on account of a cold, from which he soon recovered. At the last report, he was in good health.

Case 6.—Mr. R. C. Age 41, married. Twenty years ago, had amebic dysentery in the Philippine Islands. More or less gastrointestinal trouble ever since. In 1919, he had quite a severe attack, and two surgeons recommended operating for intestinal adhesions, but he refused. Last December he was again confined to his bed; he was again urged to be operated on and refused. When I saw him, in April, 1921, he was in bed, very restless, complaining of severe colicky pains, weak, emaciated, slightly jaundiced, with no appetite, and with marked insomnia. Had a small rectal fistula. Alternating constipation and diarrhea. The urine showed albumin and a trace of sugar. B. coli and a diplococcus were numerous.

After a mild course of calomel and soda, I gave him peptenzyme in small frequent doses, and pancrobilein, three times daily. On April 12, 1921, he was given a first dose of VanCott vaccine and a further dose thereafter, each week, for about three months. On account of his run-down condition, I gave hiim "hormotone" (Carnrick). In August, there was no glycosuria or albuminuria; his fistula was well and he was doing twelve or more hours' work every day. On Sept. 24, his wife told me that he was in better health than he had been in twenty years.

In Conclusion

In the cases cited, we have leucorrhea, catarrh, influenza, pneumonia, pus tube, fistula, dysentery, etc., all due to some specific disease-germ and all of a type that may get into the blood stream and find their way into any or all organs of the body. My belief is that they get into the pancreas as well as into other organs, and act there as foreign bodies, interfering with cell function in such a way as to produce the disease we know as diabetes. It is not beyond reason to believe that most of the chronic debilitating diseases may be due to the same cause. In these and many other cases I have studied, the colon bacillus was always present and, since it produces hyaline degeneration in so many instances, I wonder if it is not the real offender.

During two and a half years (1913-1916), as pathologist in State Hospital No. 2, at St. Joseph, Mo., I found that glycosuria was present in a very high percentage of the cases and, after a time, began to make microscopical examinations of all specimens I had time for. To my great surprise bacteria were found in nearly all of them. This caused me to wonder whether glycosuria is really due to bacteria in the patient's system. I now believe it is. I am treating my cases with that theory in view, and with excellent results without exception. I have given gland-extracts in many of the cases and believe it to be good practice.

With the belief and hope that I have found something worth while in the treatment of suffering humanity, I have made bold to write about it. I may be wrong. If I am, no harm has been done. But, if I am right, I thank God for the privilege of living and the pleasure that goes therewith.

As land is improved by sowing it with various seeds, so is the mind by exercising it with different studies.—Pliny.

Surgical Seminar

Conducted by GUSTAVUS M. BLECH, M. D.

Cystitis

INFLAMMATION of the bladder is so frequently seen by the general practitioner and specialist, especially at this season of the year, that a frank discussion of this affection will undoubtedly prove of some interest to many readers. I have selected this subject for another reason also. In my personal experience, I have encountered a number of colleagues who seem to have fixed notions about the character of cystitis and its treatment, notions which have led them to entertain the idea that a diagnosis is easily made and that the treatment of cystitis is a mere matter of routine, and I have talked with others who realize that the problem is rather complicated and really a matter calling for the scientific skill and acumen of urologists. I feel that the time is ripe to point out that both are incorrect in their opinions.

Cystitis is not the simple affair that can be disposed of with the customary routine irrigations, nor is it so complicated as to require specialistic methods for recognition and rational treatment.

The word cystitis per se has little meaning. Those who have served in the army know that the regulations prescribe that all inflammatory diseases must be classified as either acute or chronic, and that, whenever possible, the pathologic character of the inflammatory process, such as catarrhal or suppurative, should be added in all official reports.

This rule can not be applied with scientific exactness to cystitis.

It is easy enough to recognize an acute cystitis, but it is almost impossible to tell when the acute stage has ceased and the chronic has begun. Take, on the other hand, a well-defined chronic cystitis and, if an opportunity is afforded to see that patient for any reasonable length of time, one is bound in all cases to see exacerbations typical of acute cystitis.

We know today that virtually all inflammatory affections are produced by bacteria. We are familiar with the elaborate classifications of cystitis in accordance with the bacterial character of infection. I think that such a classification is without practical value and useless because most forms of cystitis show mixed bacterial infection. Likewise, I am firmly convinced that the classification of cystitis according to the anatomico-pathological character of the bladder is an academic refinement devoid of any great practical value.

What we are principally concerned with is the recognition of two facts: first, that cystitis is seldom, if ever, a primary disease, but in the majority of cases secondary to some other disease; and, second, that the bladder epithelium has great defensive powers and that it requires trauma, congestion and the like so to weaken the defense that the epithelial fort can be battered down.

When it comes to bacterial considerations, we must make one great exception and that is in favor of the bacillus tuberculosis. Tuberculous cystitis, in my opinion, represents a distinct clinical entity as compared with all other forms of bacterial infection.

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Etiology.—Bacteria may invade the bladder from three sources, namely, from the kidneys via the ureters, from the outside through the urethra and from neighboring regions or organs.

As it is my intention to conduct a seminar and not a department of special articles, I shall go into these problems no farther and refer the reader to the following "exercises," all of which are actual cases from my private and hospital practice. While discussing the diagnosis and treatment as we go along, we shall not hesitate to go more detailedly into the cause and pathology of each case to substantiate the rationale of our therapy.

Case 1. A young man, about 32 years old, and by occupation a truck driver, called for the relief of a cystitis which had caused

him sleepless nights and which had not improved in spite of many medicines prescribed by his physician.

There is nothing in his past history that has any direct bearing on the cystitis except that, about four months ago, he contracted for the first time a gonococcal urethritis for which he received routine irrigations and balsamics. He was also instructed to syringe his own urethra with a colloidal-silver solution.

There were no complications, neither epididymitis nor orchitis. While in the first two or three weeks he had suffered from burning and somewhat painful micturition and from chordee, these annoying symptoms had gradually disappeared. The only complaint he had was, that his physician had not stopped the urethral discharge. He believed himself on the road to recovery when, without anything to account for it, he had a return of the urinary phenomena and at once concluded that the urethral infection had lighted up again. His physician, however, enlightened him as to the diagnosis, and, indeed, he himself noticed that the calls for urination were now more frequent than even at the very beginning of the trouble, that the act was more painful and that his sleep had to be interrupted, sometimes twice, sometimes three times during the night. From what he tells me, his physician gave him capsules containing some such preparation as arrhovin or possibly gonosan and at once stopped all irrigations. The medicines did not agree with him, causing gastric symptoms and, as a week's treatment did not benefit him, he sought my aid on the advice of a friend.

Now, in a case like this, the diagnosis is not difficult. He had no history of previous kidney trouble, there was nothing, on physical examination, to indicate suppurative trouble in the prostate or in Douglas space; he was not sounded by his physician. His urine, on the three-glass test, showed turbidity throughout and the centrifuged specimen left no doubt as to the gonococcal character of the cystitis.

Did he have a stricture? I could not answer the question at that time and there was no need answering it; because, even if he had one, it was not producing urinary retention. If there was any stricture at all—most probably all men afflicted with acute gonococcal urethritis have large-caliber strictures after the disease has lasted some time—this was not the moment to look after it without risk of aggravating the principal trouble.

So, without the introduction of a sound, without the use of a cystoscope, but solely on the chemical and bacteriological examination of the urine and the clinical history, a positive diagnosis of *gonorrheal cystitis* was made.

Just as in this form, so in many other forms of cystitis, it is a good policy to make a diagnosis from the clinical history and the urinary findings. The cystoscope is an exceedingly valuable instrument, especially in the hands of a surgeon trained in its use; but, in the acute forms (and that applies also to the socalled exacerbations of cystitis), it should be an appliance to be left in its case.

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Treatment.—If we examine many modern textbooks, we will receive all sorts of advice. Some authors absolutely forbid irrigations, others favor it. It is difficult to explain this variance of opinion. I can only base my own opinion on actual experience and I do not hesitate to say that irrigation of the bladder with silver solution is a most important part of the treatment, providing that it is properly administered.

For all the socalled antigonorrheal balsamics, I have no use at all. They may be of some use, but, certainly, not in acute gonococcal cystitis. As this patient testifies (and I have had that testimony from others), these drugs tend to disturb the stomach. Several tests undertaken by me some years ago show conclusively that they have practically no influence on the course of the disease and that, whatever improvement could be noted, was doubtless due to the dietetic and time elements. Of the drugs which I still use, hexamethylenamin (urotropin) and salol rank first. Sodium bicarbonate is valuable only to render the urine alkaline, to stop the sensation of scalding while the urine passes the urethra. Of great importance is the ingestion of large quantities of pure water.

My friend, Dr. George C. Koch, of Hot Springs, Ark., informs me in a personal communication that he has seen beneficial results from a tea made of fol. uvæ ursi. At present, he uses the fluid-extract. He is convinced that this old remedy has been neglected and that it is to be recommended in all forms of acute cystitis. [Arbutin,

derived from uva ursi, has proved of great value in our hands.—ED.]

I know that many, and especially German authorities, speak of that drug in the treatment of cystitis; but, as I have had no personal experience with it, I am not competent to express an opinion.

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Irrigations.—Now a word with regard to irrigations. As a general surgeon, I am not supposed to question specialistic authority. Unfortunately, years of practice have forced on me iconoclastic views and I respect authority in science only when I am sure that the particular authority is right. Now, a large number of urologic surgeons would irrigate through a catheter introduced into the bladdder. This I reject. Doubtless, each surgeon is firmly convinced that his manipulative skilf is so finely developed that there is absolutely no trauma connected with the introduction of the instrument. I dispute that and, what is more, I do not think that even the most skilful introduction of a well-greased soft-rubber catheter is an entirely harmless procedure in a case of acute cystitis. I make all bladder irrigations by means of a large hand syringe, the nozzle of which has a suitable soft-rubber tip, which can be slipped over the nozzle and taken off to be placed into an antiseptic solution until needed again. These tips are inexpensive and one can keep a large number in stock.

The irrigation itself is usually a very simple affair, provided that care is taken not to exert undue pressure. At first, most patients offer resistance to the entrance of any fluid into the bladder, through contraction of the sphincter vesicæ; but, after a few gentle efforts, this spasm can be overcome. Whenever it appears that these efforts fail, especially when the patient has followed the surgeon's instruction to take a deep breath just before the fluid strikes the muscle, it is best to desist and introduce (with a small syringe) a 1% solution of procaine, which acts as an analgesic. The solution should be retained in the urethra by compressing the external orifice for five minutes. After the urethra has expelled the analgesic solution, the irrigation can be resumed, when it will be found that the resistance of the sphincter muscle is negligible.

As regards the drug to be used, I am firmly convinced that nothing in our armamentarium can compare in effectiveness with silver nitrate and I begin with injecting, into the emptied bladder, about 2 ounces of a 1/10 percent solution, increasing that by 1/10 every day until I attain the strength of 1 percent. After that, a cure is usually the result.

If at any time, after one of the injections, the patient complains of pain, I allow the solution to remain in the bladder five minutes only and then add about 2 ounces of plain warm water by injection.

In this respect, I invite your attention to the procedure advocated by the famous surgeon, Rovsing, who injects 50 cubic centimeters of a 2-percent solution of silver nitrate to cauterize the mucous membrane of the bladder for two minutes, after which he injects an equal quantity of water and allows the entire to remain in the bladder.

Rovsing is so confident of the efficacy of this method that he has come to teach that if, after three such treatments, the cystitis is not cured, one can be sure of having to deal with complications.

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Case 2. A young girl of about twenty, a stenographer, calls for the relief of an annoying cystitis. Her cystitis is of about nine weeks' duration. Her family physician had diagnosed it as a catarrh of the bladder, due to exposure to cold weather, had put her on a diet, had ordered hot baths and had given her some medicines; and, while she had periods of relief, from time to time, she had at present "another recurrence." The family physician came with her and assured me that he had examined the urine several times, but, outside of turbidity and some pus cells, had found nothing. The urine was never alkaline or "foul smelling."

The young woman, as I saw her for the first time, impressed me as a frail, sick being, and I confess that I was sorry for the weeks lost in futile therapy. Her physician may be a good general internist, but, when it came to a disease requiring at least some surgical training, he was completely in the dark, and it is for the purpose of benefiting our readers rather than from a desire to criticise, that I cannot refrain from pointing out that, in this case, I at once condemned her physician as unwittingly negligent and incompetent. I promptly diagnosed the case as one of

tuberculous cystitis, with the mental reservation of confirming the diagnosis.

Her urine was acid. There was very little turbidity. Now, unless there are complications, you can put it down as a safe rule to follow that, in a prolonged case of cystitis with little pus apparent on microscopic examination and reacting red on blue litmus paper, you have a case of tuberculosis!

When I told that to the physician (of course, while we were alone) he looked askance. He had absolutely excluded a gonococcal infection and with that he believed to have accomplished quite a diagnostic feat! And this in a big city, with an unusually large number of pathologic laboratories ready to serve the medical profession for a small fee!

My assistant centrifuged the specimen, stained the sediment and, in a few minutes, we could satisfy the family physician that our diagnosis was based on a sad fact.

Whence the tuberculous infection? There can be but one answer. The patient may or may not have tuberculosis of the lungs. In this case, I was unable to determine that with a degree of certainty. But, tuberculosis of the bladder is invariably due to tuberculosis of the kidney or kidneys and in all such cases the question to determine, next to the general condition of the patient, is, which of the kidneys is affected.

We must answer that at once. First, because we know that, in about eighty per cent of all cases of tuberculosis, only one kidney is affected, and second, because the local therapy of the bladder in tuberculous cystitis is not only useless, but absolutely dangerous and contraindicated, and because the only treatment which will assure a cure of the sad condition, with its painful spasms during and after the act of urination, occurring so frequently during the day and often also during the night, is to be sought in a promptly performed extirpation of the affected kidney.

After the operation, all measures calculated to benefit tuberculous patients must be instituted and this can be accomplished the same as we are in the habit of prescribing for consumptives; for, the genito-urinary apparatus will require no further attention. However, the cystitis disappears shortly after the removal of the diseased kidney.

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It may be held that my criticism of the family physician was unjust in so far as a diagnosis of tuberculosis of the bladder in the first stage of the affection is not always easy, that the clinical picture is not then well defined and so on. To a limited extent, I concede the validity of the argument. I do not blame the physician for not having made a diagnosis the very first or second visit. However, what I do blame him for is that, when he saw that his remedies and his baths and diet and so on did not benefit his patient, and that the urine continued to remain acid, he did not even then suspect that possibility of a serious infection.

Of course, I did not expect him to verify or even search for a diagnosis by cystoscopy (though in just such cases the use of the cystoscope is decidedly indicated) since cystoscopy requires special experience which even many general surgeons do not possess. Yet, even without the cystoscope, the condition should have been suspected.

This young woman was operated on by me and made a splendid recovery. We sent her away to Colorado, not because the lungs showed any definite lesion (even a consulting clinician could only express his suspicion), but because I have the utmost confidence in Guyon's teaching that tuberculosis of the kidneys is not a primary, but an embolic infection, that, accordingly, all patients with tuberculosis of the kidney have tuberculosis elsewhere. Consequently, the interest of the patient demands the cure of the primary focus wherever that may be.

A helping word to one in trouble is often like a switch on a railroad track—but one inch between wreck and smooth-rolling prosperity.—Beecher.

The General Practitioner

Talks About Professional and Personal Problems

Conducted by WM. RITTENHOUSE, M. D.

The Morphine Habit

IN an article on morphine, printed in the July (1921) issue of this Journal, I made the following statement:

"For the criminal degenerate who deliberately adopts the morphine habit, I have no iota of sympathy; the sooner he gets his worthless carcass out of the world, the better. But, for the invalid who contracts the habit through great suffering, I have every sympathy, and for him I have also a word of hope and cheer. The matter is not as bad as he has been led to believe. There has been a great deal of hysteria written and talked on this subject. Get that terrible fear out of the victim's mind, and the battle is half won. Three times I have acquired the morphine habit through great suffering, and three times I have cured myself of it without undue suffering and with no help but my own will power and common sense. I do not wish to parade my own case in public. Still, if I can carry hope to some unfortunate victim, I am ready to make any sacrifice to do it. When I think of the mental anguish that I endured needlessly, fearing a life-long slavery, I am filled with indignation at those who exaggerate in this matter."

Immediately after the publication of that article, I received a surprise; a startling number of doctors and nurses wrote to me saying that they had acquired the habit through great suffering, and asked to know how I had cured myself. The language of many of these letters betrayed a mental anguish bordering on despair. Most of them felt disgraced, and many had almost given up hope of cure. It was pathetic. I was more indignant than ever at the false teaching that makes those victims feel degraded and hopeless. I was able to carry encouragement and hope to many of them, and I have heard from a number of them since, that they are slowly succeeding and have taken on fresh hope.

My own experience was at first like that of many others. The suffering that I endured from spinal disease was so terrible that, although I fought against the idea of using morphine, I was at last compelled to take it. When the need of it had passed, there was the same horror of slavery, the same despair on finding what suffering the effort to stop caused. But, I soon began to reason like this: "If a certain amount of the drug every twenty-four hours will keep me comfortable, certainly ninety-nine percent of that same amount will very nearly do so. To reduce the amount one percent, ought not to mean a great amount of suffering—not more than a determined man can bear." I tried it, and found the discomfort even less than I had expected, although it was plenty.

My next reasoning was: "If I continue at ninety-nine percent for a while, my system will adjust itself to that dose." To my great joy, I found that, in two weeks, I was as comfortable as I had been on the full amount. I then reduced the dose another one percent so that I was taking only ninety-eight percent of the original dose. Again, there was some discomfort, but it gradually faded away; and, in two weeks, I was ready for the third cut. By this time, I was full of hope and more determined than ever. I decided to experiment, to see whether I could bear a larger reduction at a time. I found that, when I was very careful of my diet, I could make a cut of four percent every two weeks and sometimes every ten days. But, the discomfort was considerable; and so I stuck to the plan of a two percent cut every ten to fifteen days.

Very slow, you will say. True. However, better slow than not at all. Without some such plan, most victims will be at the year's end just where they were at the beginning.

Of course, there are patients whose will power is so completely gone that this plan would fail. The victim must really *want* to

be cured, and he must have enough will power left to bear some discomfort without going back. Otherwise, he would have to put himself into the hands of some one who would control the administration of the drug. Still, it is remarkable how cheerfully one can bear discomfort, if it opens the way to liberty. And, there is another good feature about it; the more the will is exerted, the stronger it becomes. After a few successful reductions, I had no further fear of failure, while my courage and determination grew stronger.

The trouble with what is generally called "gradual reduction" is, that it is not gradual enough, and really constitutes a severe shock to the system. A person who is taking even a grain a day can not expect to be cured in a month, unless he is prepared to endure intense suffering.

In my plan, the dosage is something of a problem: it is necessary to be very exact; and, to gauge a reduction of one percent is not a simple matter; still, it can be done. Here is my plan: some one else may think of a better one. Use a hypodermic syringe of glass, so that air bubbles may be readily seen—one with a minim scale, so that exact measurement is possible. Dissolve twenty-four hours' supply of morphine in 96 minims of distilled water; 96 is more readily subdivided than 100, and 1/96 is very near to being one percent. Tap-water or well-water should not be used, as it is liable to cause a precipitate; and a solution should never be kept more than one day, as it will decompose and cause abscesses.

Suppose the patient is in the habit of taking four doses in twenty-four hours. One-fourth of 96 is 24 minims for each dose. I found it a good plan to make the bedtime dose a little larger and the others proportionately smaller, so that the total was still 96. When ready to begin reducing, cut *one* of the doses a single minim That will be almost exactly one percent. If the patient can stand a larger reduction. take a minim off two of the four doses. A minim off each of the four would be 4 percent. It goes without saying that the strictest asepsis must be observed. I also found it a good plan to mark each puncture of the skin with pen and ink, so as to avoid hitting the same place soon again; for, that is painful and tends to abscess formation.

Most of my correspondents stated that they were taking a variable amount from day to day, according as they felt; for example, 3 grains one day and 2 the next. I say to them all: "Find out the *exact* amount per day needed to keep you fairly comfortable. *You will fail as long as you vary from day to day.* When you have ascertained the exact daily amount, keep strictly to it for two weeks; then (and not until then) you can begin to reduce. If you have not will power enough to stick to a fixed amount for two weeks, this plan is not for you, unless you put yourself into the hands of a friend who will supervise the administration.

To sum up the plan briefly, these are the main points:

1. Exact dosage, unvarying except at the regular times of reduction. Very important.

2. A reduction of 1 or 2 percent every two weeks.

3. Proper diet adds much to the patient's comfort. Avoid all beef and pork, except a little bacon. Eat lightly; go a little hungry sometimes. Take all the milk desired with meals. Drink water freely. Keep the bowels active.

4. Training the will is the most important part of the plan; the rest is detail. The will grows stronger, the more it is exerted. When the patient finds that he can stick to a certain dose for two weeks, he will get confidence that he can do it again. Those whose will is too weak to do this, had better put the administration into the hands of some friend—at least at first.

We must consider the drug habit as a disease. The steady use of morphine causes the formation of an antibody in the blood. That antibody causes intense distress unless daily neutralized by morphine. If the morphine is withdrawn entirely and suddenly, the system gradually adjusts itself to the condition; but, in the meantime, the suffering is intense and, sometimes, dangerous. I know, for I have been through it. It was tried on me in the hospital without my knowledge, and such suffering I hope never again to endure. It is worse than mere pain. The plan outlined by me makes the reduction so gradually that the discomfort, although present, is bearable.

Finally, don't try to go too fast.

The chief objection to the plan is the length of time it takes. But, this is not as weighty an objection as it would seem at

first sight, if we bear in mind that, all this time, the will is growing stronger; and especially this fact that, if the attempt is not made, the patient will, a year from now, be just where he is now. If, a year from now, he can see that he has reduced the amount fifty percent, he ought to feel encouraged.

Free Speech

There exists in the public mind more or less confusion on the subject of free speech. All intelligent people recognize the fact that free speech and a free press are most important bulwarks of a free commonwealth, whatever be the form of government, whether monarchy, or republic, or some form of communism. The moment that criticism of the ruler by the ruled is denied, every sort of abuse is certain to creep in, and the liberty of the people suffers. No human being is perfect enough to exercise power over his fellows, unless some sort of check exists to the exercise of that power; and no more powerful check has ever been devised than pitiless publicity—free speech and a free press.

But, every good thing can be perverted, and Satan is never so dangerous as when he disguises himself as an angel of light. The promoters of every evil design are always ready to raise the cry of "free speech," the moment a check on their activities is attempted.

Let us for a moment examine into the logic and sincerity of this cry which so many people accept unthinkingly as final and conclusive.

Nobody believes in free speech! That is, no sane person believes in absolutely free speech; we all draw the line somewhere. If a ruffian uses vile and obscene language in the hearing of my wife, my daughter, or my little son, I call the law to my aid, and all good citizens approve my action. The fact that such a law exists is proof that the community believes in restricting speech that demoralizes. Now, the preaching of doctrines that tend to destroy all that has made civilization worth while, may be just as demoralizing as to compel pure minds to listen to vile language. Everything must be judged by its effects. We all draw a line, but we may honestly differ as to where the line should be drawn.

What kind of teaching is so demoralizing as to justify restraint? A large majority of people believe that advocating the overthrow of all government is so evil that the authorities are justified in stopping it. When, in wartime, any one utters speech that gives aid and comfort to the enemy or that tends to the defeat or death of our soldiers, he is punished, and normal minds approve. When the movies show pictures that fill the youthful mind with the idea that criminals are heroes, people who believe in morality, and honor, and truth call for censorship. And, yet, we hear people who call themselves good citizens, and newspapers that claim to uphold good citizenship, denouncing the censorship, calling it tyranny, puritanism, and narrow-mindedness. It is true that a few censors have done foolish things; but the remedy is, to have better censors rather than to abolish the censorship. If we throw the bars down entirely, there are plenty of men who, for gain, will exhibit pictures that tend to corrupt the young and pure minded. When censors are political appointees who see in the office a splendid opportunity for graft, or cranks who want to compel every one to adopt their own narrow views, what can we expect?

When birth-control meetings are broken up by the police, the cry is at once raised that free speech is denied. They are raising a false issue. It is not a question of free speech, but of morality. If their teaching tends to do moral harm to society, then there is nothing tyrannical in its suppression.

When the government denies the use of the mails to advertisement of lotteries and other forms of gambling, it is not interfering with a free press; for, if we honestly examine the effect of gambling upon the community, and especially upon young men, we are forced to admit that it is not a question of free speech but one of moral and financial ruin. We have all seen that, when a young man becomes thoroughly imbued with the gambling spirit, he is "through," to use a slang term. He will never be any good again, either as business man, husband, or father. To check gambling is not only good morals, it is good business.

I remember in the days long before the Haymarket riot, when the anarchists held meetings on the lake front on Sunday afternoons, at which I heard them openly advocate murder and arson as weapons to be used against the hated capitalist. They were not interfered with because the elder Harrison, who was mayor at the time, believed

that it was better to let them talk and blow off steam as a sort of safety-valve. But, it did not work out that way. They grew bolder and bolder, until at last, in 1886, on the Haymarket, the bomb was thrown that killed half-a-dozen policemen and wounded about forty more. Those who had been preaching murder as well as those who had committed it were held responsible and, if I remember correctly, five of them were hung. For years thereafter, the good effect on law and order was apparent. At that time, I was practicing among the working classes, mostly foreign-born. I could see the difference in their mental attitude. They saw where their anarchist teachers had been leading them and, when the teaching was stopped by the law, most of them gradually returned to saner views on the subject. I was present on one occasion, in a lodge room, when a debate took place for and against anarchy, and I was a little surprised to see that the majority practically took the ground: "We were deceived. We want no more of that kind of teaching. The government of America is good enough for us, etc." I am convinced that, to permit the teaching of anarchy on the ground of free speech, is fallacious reasoning.

It is especially the younger generation that should be considered. Only hearing one side, they became imbued with doctrines that bode ill for the future. Even educated people do not reason any too logically, as is shown by the numbers of "parlor bolshevists" we have in our midst—birds that foul their own nests; but with those of little or no education, reasoning is practically unknown and logic a sealed book. The arguments of the kind referred to are so flimsy and illogical that it is difficult to see how any one can be misled by them. The ignorant man is always suspicious. Conscious of his own inferiority, he is continually afraid that some one is taking advantage of him. The demagog knows this, and plays upon it. He stimulates his suspicions, feeds his envy of the rich, and adds fuel to his hate of the law.

How far a free nation should permit such a self-destructive process to go on, is one of the biggest questions of our time. The difficulty of doing anything effective is enormously increased by the fact that the making and enforcing of our laws is so largely in the hands of party politics. The politician is shrewd enough to shift the blame to other shoulders and make the anarchist believe that the capitalist is the guilty party. We all remember how, when we went into the war, hundreds of people, who should have known better and many of whom did know better, denounced the war as brought on by Wall Street, by the ammunition makers and builders of cannons and war-ships.

Every man has an influence in some circle; no class of men more so than the medical man. Let us use our influence, wherever we may happen to be placed, towards sound reasoning and straight thinking.

I have an abiding faith in the strength and permanency of our Anglo-Saxon civilization; and, yet, I see that, today, as never before, it is threatened with grave dangers. Europe is trembling on the brink; if it goes down to ruin, will it pull us down with it? Some of our clearest thinkers are fearing such a catastrophe. For four hundred years, the civilization of Rome seemed impregnable; yet, it went down. The same causes that destroyed the Roman republic are active among us today. Will they bring the same finale? I hope not; I think not. I believe there is a germ in our civilization that will save it and that was not in the civilization of Rome. I am not a pessimist; but even an optimist need not, like the ostrich, bury his head in the sand.

2920 Warren Ave.

Habits are soon assumed but when we strive to strip them off, 'tis being flayed alive.—Cowper.

Good Medicine

Let us learn as we go, but not forget what we know

Conducted by GEORGE H. CANDLER, M. D.

Noblesse Oblige

THERE comes to my desk a communication from a very earnest—and also capable—physician, which contains an appreciable kick. The writer suggests that I might produce something interesting on the subject, but it is doubtful whether anything one could say would materially add to the strength of his indictment. The question is, how many of us upon searching our consciences will have to plead *pecavvi?*

The deponent saith: "The other day, a patient, a woman approaching middle life and in the position of the woman in the Gospel, told me, among other things, that of all the numerous remedies prescribed for her by many physicians, she had never taken any except those that I gave her. She declared that she was so absolutely disgusted with the manner in which physicians deal with their patients. She said they either 'four-flush' or tell you that what ails you is in your imagination. She asserted that she hardly ever, in fact never, until coming to yours truly, had found a physician who really took sincere trouble to find out what was the matter with her. Moreover, she expressed it as her opinion that most physicians frequently deliberately deceive their patients and that they neglect them.

"Now; this woman is neurasthenic, without a doubt. She is perhaps a *malade imaginaire,* but that doesn't mean that her trouble is *imagined,* no matter how much it may be *imaginary.* As a matter of fact, there are enough physical things (among others, an acidity of 75,000) to account for many of her really distressing symptoms.

"Now, that is just one type. It is such people as these who justly become disgusted with their regular medical attendants and who drift to the osteos, the chiros and the Christian Scientists. Among the worst offenders against the defenseless patients are the many surgeons who, in their arrogance, assume or even intimate that every internist is more or less of a fool.

"To tell a patient point-blank, or even to intimate that his trouble is imaginary, is not only an insult, it is a bit of crass stupidity! If the doctor will not take the trouble, and if he is too lazy, mentally, to study his patient and to find out just exactly what is wrong, for heaven's sake, let him go to selling automobile accessories, or making shoes, or digging the soil! Anybody who hangs out his shingle and offers to treat the sick simply must, in common decency, avail himself of all possible means to determine a diagnosis and to guide the diseased organism back to health.

"If you want to make something out of this, go to it."

Now, if by any chance, you are one of those "arrogant surgeons," you will, of course, instantly recognize the fact that this philippic emanates from some simple "medical dub" who insists upon trying to make people well without removing part—or parts—of their well-loved anatomy in the process. You may even complacently contemplate the hysterectomy you would do in order to correct the undoubted hysteria underlying this foolish female's fancies; also to give her something else to think about. Item: also to keep her wretched husband from worrying about her by reason of having to worry about paying for the hysterectomy! Evidently YOU would never "even intimate" that the trouble is "imaginary" and would very promptly "determine the diagnosis;" but, esteemed confrere, do you honestly and sincerely believe that you would so "guide the diseased organism back to health?" Maybe, after all, you may have to join the *pecavvi* class?

Again, you, who read these halting lines, may be a successful and very busy (otherwise "eminent") physician, occupying a

commodious suite of offices and commanding the services of an office girl, perhaps even those of an assistant. To you, after many, many visits to various practicians, comes, by appointment, the unfortunate individual who presents no very definite symptom complex but still feels sick, miserable, out of touch with things generally, and in urgent need of reconstruction. The case history is taken, a more or less thorough physical examination made, and the patient's card endorsed "neurasthenia," "neurasthenia gastrica," or something equally indefinite. Maybe even, after fifteen minutes' personal consideration, you tell the patient that change of climate, taking a fresh interest in something, or having her teeth extracted, will work wonders? Maybe, of course, if the patient can stand the financial strain, you will put her through the various protein tests, have her referred to gynecologist and radiologist, and then keep her "under observation" for a month in some hospital. All of which, of course, may be perfect practice and may "bring the diseased organism back to health," *provided* you really take these steps in an earnest effort to find out just where the disorder in the organism exists and not as a matter of routine.

If the latter be the case, and you fail to benefit the woman (even though you have benefited yourself), it certainly is very disgusting of her to get perfectly well after some quite obscure little doctor removes a thirty-foot tapeworm with a single dose of aspidium and ol. ricini!

The *pecavvi* refrain may come from high places!

It *is,* I also think, "crass stupidity" to tell a puzzling patient that his disorder is "imaginary." Nine hundred and ninety times out of a thousand, there is something fundamentally wrong with a human being before he consults a doctor and the more vague and extraordinary his (or her) complaints, the more necessary is it that every possible angle of the case be studied, the patient meanwhile being helped not alone by intelligent medication, rational dieting, etc., but bv feeling that his medical attendant is taking a very definite interest in him and intends to search out and correct his trouble.

Noblesse oblige should mean much to the physician. The mere "hanging out of his shingle," as my correspondent puts it, means to those who see it, that he is prepared to *skillfully* treat the sick, and those who place their physical welfare in his hands are entitled to something more than perfunctory or slip-shod service. I think, too, that most physicians who have practiced for many years will agree with me that the reward—not necessarily financial alone—which the conscientious and capable doctor receives on this earth is an adequate one.

Be this as it may; if we enter the profession of medicine, we are pledged, first of all, to serve those who are sick to the extent of our ability and, if false to our trust, we are failures no matter how much money we may amass or how high our seat may be in the councils of the elect! We can not all, unfortunately, have equal ability in all directions, but, we can all be equally honest and give the very best that in us lies. Then, if there comes a time—as come it will to most—when we find our professional resources exhausted, we can, with good grace and a clear conscience, turn our patient over to someone who has proved by his work that he knows—or can do—more than we can in some particular direction.

But, it is my experience that, by careful work and often by the institution of comparatively simple remedial procedure, we can ourselves "guide the diseased organism back to health," thus—and only so—fully justifying the trust reposed in us by the patient because we proclaimed ourselves to be qualified to receive it. Failures, of course, we must all have; but, from them, even, we should acquire knowledge which will serve us well in some future emergency and the only failures which are disgraceful—which smirch our escutcheon—are those which come from violation of our sacred professional obligations. For such, let us cry *"pecavvi!"* and resolve to sin no more.

Noblesse oblige!

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I knew that something serious would happen when the saxophone became popular. Now, great intellects are tottering under the strain and we find grown-up men (some of 'em bald-headed) seriously debating whether or no strychnine has any therapeutic value!

Will ipecac make you sick?

Will ol. tiglii produce copious alvine dejections?

Will cowage dropped down your back make you itch?

They will? WELL. Has strychnine any

therapeutic value?

Express, kind sirs, your candid opinion in these pages, BUT please control your language! We must bear with these poor pe-o-ple: they are sore-ly af-flic-ted and mer-it our con-sid-e-ra-tion.

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Not a few physicians have more or less extensive x-ray dermatitides under treatment and find it extremely difficult to secure permanent healing. Unfortunately, those cutaneous regions which have once been overexposed retain indefinitely a remarkable vulnerability toward mechanical, physical, chemical and medicinal noxious agents. The condition is very similar to that of a fire smouldering under ashes.

Treatment, in these cases, must naturally depend to a great extent upon conditions present. If an ulcer obtains, it may be necessary to excise the affected tissue and graft-over the area. Such procedure is perhaps the best protection against the development of epithelioma. Paradoxical as it may seem, applications of radium have been reasonably successful.

In the milder x-ray dermatitides, oily antiseptic dressings often prove extremely useful, and, from experience, I would be inclined to strongly recommend thymol iodide (40 grains to the ounce) in a purified vegetable oil.

Where epithelization is deficient, one can with advantage apply wet dressings of Incitamin, prepared according to the formula of Prof. Fischer, of Denmark. Incitamin is a sterile, nontoxic serous liquid, containing the active ingredients of various glandular secretions, mainly those of the pancreatic and salivary glands. Applied as a simple wet dressing, it stimulates nutrition, promotes the rapid formation of strong, clean granulations, relieves pain, renders the wound sterile and generally insures conditions favorable to rapid repair.

It so happens that I, myself, have recently had to treat some very extensive burns and, as is usually the case, certain limited areas became infected and it proved almost impossible to secure satisfactory healing. Under Incitamin dressings, however, conditions changed very rapidly, epithelization commenced within two or three days, and in a very short time the entire area was covered with a flexible healthy skin.

It is of interest to note that Prof. Fischer received the inspiration which led to the perfecting of Incitamin while watching a dog lick its sores. It occurred to him that wounds so licked by animals healed very rapidly and usually without suppuration, even under the most unfavorable conditions. For this, naturally, there must be a definite reason and he concluded that some enzyme probably existed in the saliva (of a dog, at least) which digested bacteria and served to stimulate tissue regeneration. A long and interesting series of experiments ultimately proved the correctness of this theory and voluminous case reports now evidence the remarkable efficacy of the perfected product in human practice.

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The question has arisen whether or no it would be desirable for the physician to attempt to beautify his clientele—even to the extent, if necessary, of peeling the faces of those females of uncertain age, who would pay several hundred dollars to present to the world a "baby face."

Personally, we are inclined to believe that the physician, unless he specializes in cosmetics, will have considerable difficulty in securing the fees that the "beauty specialists," so called, are able to collect, and, unquestionably, the medical man will obtain good results only if he has familiarized himself with something more than the elements of dermatology.

It is true that in few other domains do quacks follow their trades so shamelessly or reap quite such rich rewards, and, were the physician to impress upon his clientele that, in order to be beautiful, they must be healthy and, in order to be healthy, they must be directed by somebody familiar with the vital processes, the field of these gentlemen would be materially restricted.

Joseph, in his introduction to "A Short Handbook of Cosmetics," says: " 'Medicine' has reserved for herself the care of bodily health and proper development of man's frame, and, though her methods at times have become the target of severe criticism, yet in the long run she has been successful in convincing most people that health, and health alone, must form the basis of cosmetics. No longer has cosmetics for its aim and object such follies as the renewal of youth; it has become a definite branch of medical research, and has shown that the preservation of beauty is an obligation and a sacred duty which we owe to our bodies."

In this connection, I desire to ad-

vance the idea that the whole individual must be dealt with if we are to bring the skin into a cosmetically sound condition. Its relationship with other parts of the body must almost always be remembered, for remarkable relationships between the skin and internal organs exist in certain diseases, as witness the harmful influence of various maladies upon the appearance and functions of the skin. The fresh, clean color of health can only be restored by rational general treatment, and, in no other way, may the cosmetic art be successfully practiced. Here, maintenance of elimination, careful dieting, and, perhaps, the careful administration of certain hematinic and reconstructive drugs play an important part. The use of peeling pastes is dangerous and usually resorted to only by those who think they have entirely lost their complexion, or by individuals who refuse to realize the fact that the fifty-year-old skin cannot possibly present the appearance it does in the second decade of life.

However, as some foolish people are willing to pay large prices to have their faces peeled, it would seem that, if they *must* be peeled, they may as well be skinned by the physician. Two of the best exfoliative pastes in use consist of: No. 1: resorcinol, 40.0, zinc oxide, 10.0, kaolin, 5.0, benzoated lard, 25.0; No. 2: resorcinol, 20.0 to 30.0, potash soap and sulphur, aa. 20.0, spts. lavandulæ, 30.0 to 40.0.

Lassar's formula is also popular. Its composition is as follows: B-naphthol, grs. 38, sulphuric precip., drs. 3 grs. 12, saponis mollis and paraffini mollis, aa. dr. 1 grs. 17; M. ft. ungt. This thick mass is to be spread over the diseased portion of the face for half to one hour, and then removed with dry cotton. This procedure is repeated for three or four days in succession. In the meantime, on account of the increasing dermatitis, the patient must not wash, but in case of need may apply a neutral powder to relieve the excessive tension. After the peeling action has begun, a mild, non-irritating ointment may be used for several days. The exfoliation treatment may be repeated several times at intervals of one to two weeks.

Into another scaling preparation, recommended by Unna, resorcin is introduced as an effective ingredient. In order to render elastic the membrane which is formed, an addition to the resorcin paste of 10 percent ichthyol and vaselin has proved serviceable. Formula: terræ siliceæ, grs. 8, resorcin, drs. 2½, zinci oxidi, ichthyol and paraffini mollis, aa. grs. 38, adip. benzoat., ad. drs. 6 grs. 26; M. f. pasta. The above should be applied twice daily, with a paint brush, to the face, which, on the third or fourth day, is covered with a brown, adherent mask-like layer. Within the next three or four days, the peeling off of the resorcin layer proceeds under the application of bland ointments and lotions. For skins which are very sensitive, the use of a paste containing 10 to 20 percent resorcin is recommended. Immediately after the completion of one scaling treatment, a fresh one may be instituted, which, according to the severity of the case, may be frequently repeated. If one desires to spare the patient the brown color of the portion treated, which persists for several days, the ichthyol must be omitted. A feeling of lassitude may possibly arise through absorption of resorcin, which soon passes off, though, and to which no importance need be attached. Before beginning a peeling cure, it is advisable to render the skin free from fat by rubbing it with benzene.

Unquestionably, the above-mentioned "peeling processes" are best carried out clinically by the doctor himself or in his presence, so that he can satisfy himself daily as to the effect of this somewhat heroic treatment.

Occasionally, repeated applications (i. e., two or three times daily) of a 25- to 50-percent solution of resorcin are employed and, in some cases, act promptly and satisfactorily. In the use of these peeling applications, as soon as exfoliation and irritation have disappeared, the treatment is again repeated, and so on until the result is obtained.

Personally, it is my belief that the last condition of such patients is worse than the first, and the few enameled females with whom I have been acquainted had invariably been subjected earlier to some peeling process; and, from being *enameled*, "Good Lord deliver us"!

Let's Talk it Over

The Diphtheria Problem

[Doctor Page's article, in CLINICAL MEDICINE for November last was published for several reasons, even though we absolutely disagreed with his views as to the origin, nature and treatment of the diphtheria. This article afforded a strong contrast to the one following immediately after and which showed clearly that, Doctor Page's assertion to the contrary notwithstanding, tangible progress could be recorded in the difficult problem of diphtheria control. Still, much remains to be done. Morbidity and mortality persist both unduly high. But, we need not fear the disease as we did, with great good cause, thirty years ago. Our means for combating it are far superior to those then employed.

As we had expected, and hoped, the publication of Doctor Page's article induced numbers of physicians to write to us. One of them agreed with him, in the main; the majority expressed their surprise that we should have published such archaic views. Of the various letters received, we publish, in the following columns, three; the one in partial support of Doctor Page, two in disagreement with him. The one by Doctor Lightstone will afford as much amusement to others, we hope, as it has given to us. In addition, we desire to call attention to an abstract of Doctor Curtis' article, appearing on page 152 of this issue, in which a promising local application is described. —ED.]

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Your articles, on diphtheria in CLINICAL MEDICINE for November, last, impel me to contribute a few remarks to those of Dr. Chas. E. Page, of Boston, Massachusetts.

While we do not agree on all points, our experiences certainly seem quite similar; and, wishing to do what I can to induce our profession to treat disease on a rational basis, this offers an opportunity to demonstrate a few important points.

Having made many observations, especially during the past twenty years, and having been assistant school physician about eight years, I may not be out of order when I say that I had my share of diphtheria cases.

I shall not boast of the number that came into my hands; but, I dare say that I have never lost a patient with diphtheria where I was the first physician in the case, and that I have never had a second case in the family or home unless the patient was already suffering with it when I entered the house for attendance on the first case.

No matter how many people, young and old, lived in the house, I have never found a case that could be attributed to contagion.

I have found groups of children in the same family and from the same school afflicted with the disease, but always found the origin due to the same cause—exposure to cold, or colds, wrong living. Improper dress and exposure to colds are the prevailing causes for the disease—not contagion; that has been amply proven and needs not be discussed at this time.

I have not found a thorough and impartial student of the disease who would consider diphtheria contagious, and who claims that it should be quarantined [?—ED.] Proper hygienic and medical treatment is the best prophylactic for the disease. The treatment for diphtheria that gave best results in my hands is as follows:

Begin with swabbing the throat, whether it be a case of diphtheria or only suspected. Do it yourself and do it thoroughly, and that with peroxide of hydrogen diluted with water, by means of a cotton applicator.

Renew the cotton after each swabbing, and continue as long as seems necessary to fully saturate the mucous membrane, which usually requires from six to a dozen applications at one sitting. After the physician has performed this task well, the nurse

should do it every four hours; but she need not do it so many times at one sitting.

The physician should do the work himself once or twice a day until the case is out of danger. In mild cases, this may be after the second day.

After each swabbing, the throat should be swabbed with a 2-percent solution of Menthol Camphor in refined liquid petrolatum or with the well-known pineoleum, to be used in similar manner. The cotton tuft should not be so large because it will contain more of the oil than is needed; the patient should be asked to swallow the oil. It will soothe the epiglottis and other parts and act as an emollient to the mucous membrane of the mouth.

Then the patient should be asked to use a gargle. Unquestionably, the tincture of iron mixture is the best all-round gargle for this disease. The following prescription will be found to include every desired result and make an attractive mixture:

℞ Tr. ferri chlor., 4 drs; Mercuric chloride 2 to 4 grs.; Antipyrin, 2 grs. Glycerin, 1 oz; water to make 4 ozs. Of this, take 1 teaspoonful in 1 dessert spoonful of water and gargle three or four times a day. A good practice is, to instruct the patient to swallow five or ten drops of the mixture after each gargling.

Those who can not gargle may use this mixture as a swab or take a small amount in the mouth and swallow a few drops of it. This applies to small children.

A saline laxative should be administered before breakfast and before supper; enough to act well on the bowels. If the bowels do not move before bedtime, an enema of warm water should be administered.

All expect an external application, and rightly so. For that purpose, nothing excels the following:

℞ Ichthyol, 1 dr.; Tr. Iodine, ½ dr.; Tr. Aconite, ½ dr.; Glycerin to make 2 ozs. Apply to front and side of the neck, and cover with a cloth. This is better than a moist dressing and keeps the child from taking more cold.

Never allow the patient to drink or eat anything cold; but let him drink as much hot water as he may desire.

Never make a cold application. If it seems well that a moist application be applied, use a turpentine stupe, 15 drops of turpentine to the pint of water.

I do not mean to deprecate the antitoxin treatment for diphtheria when a physician has not the time for proper medical treatment. That is the only time, though, it should be used, and I really believe the physician would do better if he were to instruct the parents to send for some one who would take the pains and time required for proper treatment.

Any physician who will study the treatment described in the foregoing will be able to treat any uncomplicated case of diphtheria without loss of life; and complicated ones will receive the best treatment that has been offered for such cases. That applies especially to those complicating scarlatina, of which we have not a few. Try that and be surprised how well your patients will do.

All this, my dear colleagues, is written after many years of earnest experience, noting results and failures of many forms of treatment, and uniform success after adopting this form. I submit it for your consideration.

R. Willman.

St. Joseph, Mo.

Here is a letter in another strain:

It is surprising to me that you should allow valuable space in your journal to be taken up by such opinions as voiced in the communication in the November issue, signed by Chas. E. Page, Boston, Mass., on the subject of diphtheria. It is a waste of time, and a strain on the temper to try to enlighten such ignorance or to argue with such unfair critics, whether they be exponents of antivaccination, antivivisection, antiserum therapeusis, or antidiluvianism of any kind. "There are none so blind as those who won't see;" and, when for thirty-seven years one deliberately closes his eyes to the light of science, there is sure to be atrophy of the organs of true vision for long disuse, resulting in total inability to perceive the many secrets of nature continually being disclosed to the discerning eyes of the earnest student, or to draw reasonable conclusions from any empirical data.

After thirty-seven years' experience in medical practice and a lifelong scientific training, my well-considered opinion is that diphtheria control consists in early diagnosis, isolation, observance of the recognized laws of sanitation, with early and sufficient charges of antitoxin, both as a prophylactic and a curative agent. The more fully

these ideas are realized and acted on, the less will be the incidence and mortality of this ever much dreaded disease.

George Acheson,
Kingston, N. B., Can.

To Mine Editore of Ye Gude
CLINICAL MEDICINE:

Upon perusing your issue of November, 1921, I read with much delight the article of the great healer and physician, Dr. Chas. E. Page, of Boston, the capital city of the Commonwealth of Massachusetts. I, who abide in the sister colony of New France, in the Ville St. Marie, (Montreal), was quite pleased to read that a colleague and confrère of mine in so far away Boston should hold such advanced views on dyptheria, but we must keep it a profound secret, otherwise he may be aprehended for witchery and put in the stocks as a publik mokery, for the peeple are yet ignorant and can not tolerate advanced syense. I heartily coincide with him that cold compresses is the best remedy for dyptheria. I shall certainly not permit my payshents to be filled up with such filthy stuf as serums, forsooth the same catastrophe would happen in my city as did in Merrie England when Jenner, that heathen! inoculated them with the cowpox and these peeple had developed a bovine appearance. Here they would look like horses. Shocking. It is blasphemy.

A young man who has been in the training prophesied to me that the day will come when every disease and ailment will be treated by what he calls *biological*. He stated to me shamelessly that, whenever he sees white patches in the throat, he always gives an injection of that vile and filthy stuff. He claims that he never had a death, as he always does it in time. Such perversion of the truth, such unreasoning reasoning is only worthy of one who is beset with many devils. I shall speak to my friend the Governor and recommend him for the dungeon. He had the temerity only the other day to say that one should wash his hands when he examines a patient and that bleeding is not necessary in medesine and that the day will come when we will not have to put the stump of an arm or leg in boiling tar to promote healing and prevent bleeding as we do in this present day of enlightenment by our barber chirugians.

You, Mister Edyter, forsooth presume too much on your edytorial dygnitie when you dare to contradict so profound a scholar as my brother Page of Boston. Do not flaunt it, in the face of such virtue and knowledge or we will have another Boston Tea Party. It behooves you to stand in awe and tremble in the presence of my friend and myself. Have a care, for such an indignity and insults on our vast knowledge do not make a mockery or I shall send a few of my Iroquois Indian friends on your trail and they will bring back your scalp hanging on their belt. Such treatments as serums and vaccines you may try on the "Courier du Bois" or the Indians who are living in the wigwam near the Ports of the Hudson Bay Co. or the Hundred Associates, but never, never will I permit it to be used on the civilized white man; never, I say, as long as I can use my influence with the Governor or the Attendent.

Be brave, Brother Page of Boston, do not be dyscouraged by what these blasphemous heathens says. They are only jealous of the pinacle (or pinochle) of fame that you and I have reached. We can sympathyze with each other. I am very anxious to greet you. I have made all arrangements to come to far-away Boston. Jean Batiste Vadelonoeur, the driver of the Boston stage, is at present ailing with a belly ache. The young scoundrel of the other end of the town says it is appendicitis. Such ignorance! Such lack of reverence! So, I shall be compelled to come to see you with the day sledge. It will take me about six weeks to make this hazardous journey, but, what matters the hardship of such a long and perilous trip, when I shall be able to meet you this coming Yuletide.

[This letter was received last November.—ED.]

In your home over a hot rum punch, we shall again be able to discuss the profound topyc of treating dyptheria with cold compresses. A happy Yuletide and a merrie New Year, and may the Lord in His infinite mercy send wisdom to these scoffers and unbelievers in the enlightened year of our Lord seventeen twenty-one.

A. MAXWELL LIGHTSTONE.
Montreal, Canada.

P. S. That young scoundrel just told me he allows his dyphtheric payshents to have even some porridge and toast. The man is mad.

A. M. L.

P. S. Jean Batiste Vadelonoeur died

three minutes ago. I think he ate green apples when he was a child, may be. R. I. P.

A. M. L.

THE ENDOCRINE ASPECTS OF HYPERTENSION

At the invitation of the editor of CLINICAL MEDICINE, I am glad to call attention to an aspect of the study of high blood pressure which at last is assuming the importance that it should have in the minds of the medical profession.

For years, I have been convinced not merely that certain phases of high blood pressure—the functional type—are related to disturbances of the glands of internal secretion but that such conditions could be remedied by the use of a selected organotherapy, and I believe that the experiences of five years are convincing evidence that this attitude is correct.

The socalled "pressor mechanism" includes the adrenal glands. Their subtle hormone principle has much to do with the maintenance of the muscular tone, not merely of the heart, but of the blood vessels and all the unstriped muscles of the body. The adrenal glands also are concerned with the maintenance of sympathetic tone, the regulation of oxidization and, perhaps more indirectly, with the detoxicating processes. At all events, the adrenal glands are among the first to respond to the very beginnings of toxemia, and their response to this toxemia is a part of the body's reaction against disease and its protection. We all know that, as soon as a poison enters the circulation, there is an increased pulse rate; the circulation is enhanced; the heart and circulatory mechanism are stimulated, all of which are a part of a well-directed effort of the poison. Without going into detail, it can be safely said that adrenal stimulation increases blood pressure, whereas adrenal depletion reduces it.

It happens that we have found that the pancreas produces not a hormone but an antihormone, as Professor Gley, of Paris, calls it, largely because the pancreas is what is known as "the brake" to the adrenal mechanism; and it is possible, when the adrenal glands are overstimulated, to especially encourage pancreatic activity and thereby lessen the results of the adrenal excess. In other words, pancreas therapy is opposed to adrenal irritability and many records in the literature indicate that pancreas substance exerts a decided effect, reducing high blood pressure, especially when it is of a functional type.

The therapeutic deduction from this, then, is to reduce toxemia to the minimum; to modify those emotional and other factors which stimulate the adrenal glands, and thus permit the adrenal principle to be produced in a more normal amount and, naturally, lessen the blood pressure. In addition to this, a part of the adrenal irritability, at least, can be overcome by the antagonistic pancreas organotherapy.

The relation that the thyroid gland bears to blood pressure is quite important. A great many persons with minor forms of hypothyroidism suffer from a condition of cellular intoxication or infiltration which mechanically favors high blood pressure. In my paper "Hypothyroidism, Infiltration and Hypertension", published in *Medical Record* for November 20, 1920, I think I was able to show clearly that the cellular infiltration which results from hypothyroidism not merely influences the skin as it does in the well-known myxedema, but all of the cellular tissues throughout the body; and there is no reason why this particular infiltration should not influence the cells in the socalled "precapillary areas" where the remote ends of the circulation are allowed to go on. If these cells are swelled out, the capillary circulation between them is hindered; and, when one thinks of the tremendous area that these cells occupy throughout the whole body, there must be quite an interference with circulation, resulting in added work for the heart muscle and a correspondingly high blood pressure. From this can be seen the explanation of the well-known therapeutic fact that, in many cases, small doses of thyroid extract reduce blood pressure.

For this reason then, in cases of functional high blood pressure, it is well to find out if there is a thyroid insufficiency, which can be discovered by the use of my thyroid function test, by the estimation of the basal metabolism rate, and by looking for other findings which are expected in hypothyroidism. Thyroid therapy in reasonable dosage, ¼ to ½ grain (a half grain is a maximum dose, in these cases), is a decided advantage and frequently will reduce blood pressure as by a miracle.

Another aspect of functional high blood pressure deserves to be mentioned. The

sex glands, in some subtle way, play upon the blood-pressure-raising mechanism, and, especially, in women at the change of life there often is a functional irregularity of the blood pressure which has been found to result from the removal of the endocrine factor to which the body has been accustomed for thirty years or more. Carey Culbertson, of Chicago, K. I. Sanes, of Pittsburgh, and a number of others, have called attention to what they call "climacteric hypertension" which they recommend to be treated with corpus luteum or ovarian substance, as a means of lessening the hormone imbalance with its dependent hypertension at this time.

For a number of years I have combined these three ideas: pancreas substance, small doses of thyroid, and ovarian substance, on the one hand, or spermin, on the other. This combined therapy in functional hypertension favors three distinct benefits as outlined above, and this pluriglandular idea has, in the aggregate, reduced many functional high blood pressures, many thousands of millimeters of mercury!

HENRY R. HARROWER.

Glendale, Calif.

HIGH BLOOD PRESSURE

To me, high blood pressure is one of the lamentable fads of the socalled scientist in the practice of medicine today. Thanks to his anything but benign influence, almost every practitioner is taking blood pressure readings and patients are eternally talking about it.

Where are its evils? There are many. First of all, this matter of making every man and woman self centered as regards their health, introspective all the time and repeating what his, or her, doctor sagely remarked, is woeful in itself. Besides, unless carefully and repeatedly taken by the same physician and under similar conditions, it is often sadly misleading, as it is frequently interpreted unwisely. Taken by itself, it may and does have many meanings. Some are relatively innocent; others may be or are grave. Taken together with other symptoms or signs and after very careful examination and weighing of evidence, high blood pressure may be a good reason for active interference in order to promote the well-being of the patient. This may be accomplished with drugs, properly selected diet, general hygienic régimé, exercise, etc. On the other hand, a high blood pressure may be highly preservative and tell us very plainly to keep our hands off; let the patient alone or, at most, or best, simply administer some little corrective remedies, more than aught else, to steady the nerves and neutralize false, wrong teaching, the results of which are often far-reaching and difficult to remove.

I might continue and give not a few examples of the truth and great importance of what I have written. But, alas! what is the use? The younger physican, the half-fledged specialist thinks he knows it all and does not wish to be instructed by a "has-been." Such at present, is in medicine, the atmosphere, which reigns almost supreme. The laboratory, the use of perfected scientific instruments in their proper time and place are very desirable and should be utilized. But, when it comes to ignoring the human equation, the patient's individuality, and to believing that the sphygmomanometer can take the place or in any way banish the tactile sensation and interpretation of and from the old practitioner's finger, which has served such a good purpose through a lifetime, in order to guide and direct one's clinical procedures with patients,—*that*, I do not believe to be sound practice. May I hope that my views, stated in a very brief way, shall serve a really useful purpose in your symposium about high blood pressure?

BEVERLEY ROBINSON.

New York City.

BLOOD PRESSURE

Among the multitudinous frauds of the medical profession, practiced upon a gullible and innocent public, in recent years, the prevailing craze on the subject of blood pressure is one of the most shameful and reprehensible.

Every cultured physician knows that, from the hour of birth to the hour of death in old age, numerous factors cause variations in blood pressure, and that these variations are purely physiological, beneficent and conservative.

Every tissue of the body demands a constant supply of blood, and death will be the result if this demand is not satisfied; when-

ever from any cause the peripheral resistance to the circulation is increased, it is absolutely necessary that blood pressure should be increased to overcome the resistance. This is the *vis medicatrix naturæ*, and whoever interferes with this wise provision of nature is guilty of the grossest malpractice and has no claim to the title of Doctor of Medicine.

This widespread craze has terrorized thousands of men and women and made their lives miserable and wretched when they were told that their blood pressure was too high and that the sword of Damocles was suspended over their heads by a single thread, being liable to break at any moment.

Many thousands have fallen victims to this craze, by the use of aconite and other heart depressants, of combating this conservative rise of blood pressure, which nature employs to overcome peripheral resistance to the circulation.

Every enlightened physician knows that, in every human being, there is a perpetual conflict between the animal and vegetative tissues of the body, and that, in old age, degeneration and sclerosis are inevitable; certain diseases hasten the process of retrograde metamorphosis and, with advancing years, the elastic arterial tree becomes rigid and offers greater resistance to the circulation. Then, were it not for increasing blood pressure, life would be impossible.

Happily, the wise physician is now in possession of the means to delay the progress of sclerosis and, by his art and his science, he can assure to the old man and the old woman the complete cycle of existence.

Let us hope that this epidemic of folly of combating a wise provision of nature will soon subside.

T. J. Bowles.

Muncie, Ind.

BLOOD PRESSURE

In my opinion, high blood pressure is always a symptom of some cause that has operated for some time. Infections or other retention-products circulating in the blood, by reason of their irritation, bring about changes in the blood vessels first and the connective tissue next, resulting in arteriosclerosis. A chronic case of high blood pressure is usually made worse by taking means to reduce it. Find the cause; remove it, if possible; but don't scare the patient to death—unless he needs it to induce him to obey orders.

E. C. Junger

Soldier, Iowa.

COMMENT ON THE DOSAGE OF TYHROID EXTRACT

In an article entitled "Studies in Endocrinology" published serially in The American Journal of Clinical Medicine, Dr. Reginald Weiler, of New York City, (*loc. cit.*, Dec., 1921, p. 849) discusses the thyro-parathyroid apparatus and its relationship to modern medicine.

Some very interesting and practical information has been gathered together in this series. However, since I believe that there is a basis for differing with some of the conclusions of the author, I am taking the liberty of directing attention to his recommendations regarding the dosage of thyroid extract in the treatment of the progressive and serious forms of hypothyroidism. In his discussion of the treatment of this class of cases, Weiler writes:

"Thyroid gland, given in 1-grain doses of the desiccated product, three times a day, is sufficient to begin treatment with and should be increased ½ grain at a time until 2 grains are given at a dose; then the further increase is by ¼ grains until the hypothermia disappears. If the pulse is increased by 15 beats or the temperature goes above normal, the dose should be reduced. The morbid symptoms will gradually disappear, but the drug must be continued or a relapse is certain to occur.

"Two grains should be given and kept up after recovery. A gland-graft may be performed so that the constant taking of the thyroid will not be necessary. A very good prescription is the following:

"Tabloid" Thyroid Gland	1 to 2 grs.
"Tabloid" Suprarenal Gland	¼ gr.
"Tabloid" Pituitary Gland	1 gr.
Strychnine Sulphate	1/60 gr.
Reduced Iron	1 gr.

M. et fiat Capsula D. t. no. 50.
Sig:—One capsule during meals.

"The pituitary extract may also be given intramuscularly every other day or so. The addition of suprarenal and pituitary glands aids very much by supplying adrenoxidase, which is also deficient due to sympathetic involvement. Strychnine and iron aid in overcoming the coexisting anemia."

The first criticism that I have of this concerns the dosage of thyroid extract. The author refers to "1-grain doses *of the de-*

siccated product." Later he says "2 grains should be given and kept up after recovery." It is presumed that he refers to 2 grains of desiccated thyroid each day, although he does not indicate whether it should be three times a day or only once a day.

In his formula, he very frankly classifies the origin of the thyroid which he recommends by use of the term "Tabloid" Thyroid Gland. This is perfectly in order as the "Tabloid" brand is a well-known one made by Burroughs, Wellcome & Co., of London. To my way of thinking, it is as good a preparation of thyroid extract as is to be found on the market and it is appreciated by physicians throughout the world. It is evident, though, that Dr. Weiler does not know that there is a difference between *desiccated* thyroid gland and "Tabloid" thyroid gland. He advises 1-grain doses "of the desiccated product" and, almost in the next breath, indicates that he prefers the Tabloid brand. Now, Burroughs, Wellcome & Co. have seen fit to base their dosage upon the amount of fresh gland that is represented in each Tabloid. I have frequently called attention to the discrepancy and to the resulting difficulties which may follow if this fact is not known or heeded.

It is evident that, in his studies in endocrinology, Dr. Weiler has not run across the difference between the United-States Pharmacopœial preparation and the "Tabloid" preparation. It happens that desiccated thyroid gland (similar to the products made in America and put out under various manufacturers' names) represents a standardized finished and dried product. The "Tabloid" product, on the other hand, as the remarks on the label indicate,* is not comparable to the desiccated substance; and while, of course, it *is* desiccated, the method of figuring the dosage is quite different in the "Tabloid" product from that in any other American preparation.

Now, it happens that thyroid extract, so called, of *Thyroid Sicca, U. S. P.*, is a water-free product and each part of it represents between five and six parts of the fresh gland. That is to say, every grain of fresh thyroid gland ready for desiccation will produce only 1-5 or 1-6 grain of the finished desiccated powder. Since Burroughs, Wellcome & Co. choose to indicate that each of their Tabloids represent so many grains of this *fresh* substance, the figures are naturally from five to six times greater than those referring to U. S. P. or American figures and evidently this has been overlooked by the writer of the "Studies in Endocrinology."

I have had too many unpleasant experi ences to have any doubt in the matter. A number of times, in past years, I have had patients taking preparations of thyroid which I had specifically prescribed as the "Tabloid" variety, and when a refill was necessary (and, thyroid extract in cases of the type under discussion usually has to be given for many months) not infrequently the druggist did not happen to have the Burroughs, Wellcome variety and supplied a preparation made by Wilson, Armour, Parke Davis, or some other firm. Now, as we have seen, 1 grain of thyroid extract, U. S. P. is between five and six times more potent than 1 grain of "Tabloid" thyroid extract. Quite aside from the care and standardization, merely because of the difference in considering the dosage basis, it can be readily seen that a person in the habit of using a definite amount of the "Tabloid" preparation and suddenly beginning to use a presumably similar but differently dosed preparation made by some other manufacturer, *is going to have his dose automatically multiplied by five* or more and this sometimes is a great detriment to the patient, as one may readily see.

To my way of thinking, thyroid extract is given most satisfactorily in ¼-grain doses. This amount may be given two or three times a day and gradually increased until a maximum of 2 grains a day *of the desiccated substance* is given, all the time watching very carefully for the patient's response, both in so far as sympathetic irritability, the pulse, and the temperature are concerned.

I have for years recommended the use of desiccated thyroid substance in the following manner: Prescribe the preparation in standard ½-grain doses (of desiccated U. S. P. substance). Order one of these to be taken daily for a week, then two a day for the second week, then three a day for the third week, then four a day for the fourth week and omit them entirely during the fifth week.

The patient is seen at fairly close in-

*From a B. W. & Co. label I quote: "Each represents gr. 5 (0.324 Gm.) of the fresh, healthy gland of the sheep."

tervals and, if nothing very special happens, the stepladder dosage again is repeated. In this way, one will shortly discover the optimal appreciation of the dosage of thyroid, and the patients will inform us of their response to the varying doses and we can then pass our judgment upon their needs. It happens that the need for thyroid extract and the appreciation of the administered extract differ in every case and there can be no accurate dosage set down in black and white; for, every patient is a law unto themselves.

I might say that pluriglandular therapy is a distinct advantage, as has been suggested by Professor Weiler, although I do not agree with his dosage, as I think the amount of pituitary gland that he gives is either too great or two small, depending upon the method of figuring it.

I am opposed to giving strychnine in conjunction with adrenal substance in cases of hypothyroidism and the usually associated hypoadrenia, merely because strychnine, like all alkaloids and other toxins and poisons, stimulates the adrenal glands. Now, in many of these individuals, these glands already have been stimulated beyond their capacity to respond, and the patients have hypoadrenia, a condition of adrenal depletion which is bettered by the administration of adrenal substance or by "adrenal support," as I call it; they are harmed by the continued use of strychnine or any other alkaloids.

The matter of the transplantation of a thyroid gland in order to obviate "the constant taking of thyroid," as mentioned by Weiler, is very impractical from the clinical standpoint. It may be quite an interesting experiment. The grafts are not easily made (compared with oral therapy) and if the graft should be made and happens to "take," it is absorbed within a short time and we have the same old problem to meet over again.

HENRY R. HARROWER.

Glendale, Calif.

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[It is unfortunate that an international standard is not established in the calculation of thyroid dosage, and in the case of other drugs, for that matter. The point raised by Dr. Harrower is clearly of importance and must be kept in mind.

It is to be hoped that in time international standards may be established for the various national pharmacopœias, or codes; for the reason that, in these modern times of rapid transit and of globe trotting, prescriptions written in one country are often filled in another.—ED.]

THE SACRO-ILIAC SUBLUXATION[1]

The integrity, alignment and symmetry of the pelvic girdle are of paramount importance in diagnosis and treatment. The pelvic girdle is the foundation of the human bony skeleton. The lower limbs are not the foundation. They are merely organs of locomotion attached to the pelvic girdle. The human skeleton is an erect structure. Its natural laws of posture differ from the laws of posture of the horizontal animals. Upon the human pelvic girdle, the entire superstructure of the human body is erected.

The integrity, alignment and symmetry of the pelvic girdle, as well as the erect posture of the superstructure, are purely matters of mechanics. The average medical man seems utterly unable to think and reason in the terms of mechanics as applied to the human frame. He has been trained in the therapeutics of drugs. Possibly, he also understands the therapy of heat, cold, water and electricity. But, in this field of mechanics, where none of these apply, he is lost. This most important field was left fertile and untilled, to be occupied by the Osteopath, the Chiropractor and the Mechanotherapist. Because they saw the mechanics of the pelvic girdle, and the long list of sciatica, lumbago, crooked spines, backache, headache, paralysis, lameness, hemorrhoids, prolapsus, cystitis, uterine and ovarian disease and impotency resulting from its lesions, and profited by medical failures, the medical men stigmatized them as "irregular," "unauthorized," "fakes and frauds," "quacks" and "charlatans." These terms of opprobrium which, unfortunately, befoul the mouth of so many physicians, are no excuse for ignorance. The public has learned this and in great numbers is seeking the relief which regular medicine does not afford. The failure to recognize the sacro-iliac subluxation, in chronic pelvic disorders and allied affections, is one of the principal causes of medical failure. Its recognition and reduction is one of the principal causes of the success of the me-

[1]Read before the International Independent Medical Association, St. Louis, Mo., Sept. 23, 1921.

chanotherapist of any school in cases where the medical man has failed.

The sacro-iliac subluxation is very common. I can sit in my office and watch pedestrians crossing the street, and pick them out in great numbers from their gait alone. In young people and in the recent cases, there may be very little symptomatology. But, when the lesion is neglected, the toll of chronic disease in after-years is frightful.

You all know the anatomy of the sacro-iliac articulation. In the norm, the joint is slightly movable. In mechanics, and especially in farm machinery, it would be called a "ratchet" joint. Such joints are not displaceable laterally but only in rotation. Sufficient violence to displace the innominate upward or downward, or dorso-ventrally upon the sacrum, generally breaks them or wrecks the whole pelvis. But, rotation of the joint resulting in a subluxation is comparatively easy and very frequent. From the anatomy of the ilium, it will be noted that the attachment of great muscles, the acetabulum, the tuberosities of the ischia and the pubic arch are all excentric to the joint. All the leverages are a strain upon the joint and tend to displacement by rotation.

The two common rotations are upward and backward, resulting in shortening the leg on the affected side; and downward and forward, resulting in lengthening the leg on the affected side. This shortening or lengthening of the leg on the affected side is due to the anatomical fact that the acetabulum is excentric to the sacro-iliac joint. Both rotations cause a slight twist of the pubic symphysis. Both rotations result in the pinching of sacral nerves on one side and a stretching on the other. In many cases, this produces a sciatica varying in degree from a cramp in the foot or calf of the leg to excruciating pain along the whole sciatic tract and paralysis and uselessness of the leg. In other cases, the anterior crural nerve is affected in much the same manner. In the downward and forward rotation, there is traction on the tendons of the psoas magnus and iliacus muscles. This produces tenderness in the groin and a spasm of psoas magnus which flexes the thigh. If on the right side, it simulates appendicitis. It is a very common cause for the removal of a healthy appendix without relief. If the lesion is on the right side in a man, the appendix is removed, in a woman the appendix and the right ovary. If in a woman and on the left side, the left ovary goes the way of the appendix; if in a man, the surgeon is at a loss for a diagnosis. None of the operations give any relief.

All the nerves supplying the pelvic organs have their origin in this region. The lower ganglia and plexuses of the sympathetic lie in this region and are connected with fibers which bind them in sympathy with any irritation or impingement. Thus, the sacro-iliac subluxation results in impairment of innervation to the pelvic viscera. The tone of ligaments and other tissues is relaxed, resulting in prolapsus of the rectum and hemorrhoids, and in malpositions of the uterus. Cystitis, impotency and varicocele are common in both sexes.

The shortening or lengtheninig of the leg on the affected side alters the normal horizontal plane of the pelvis. In its lateral aspects, the normal human spine stands perpendicularly upon the horizontal plane of the normal pelvis. In standing, the subluxated pelvis will be higher on the side presenting the longer leg. This may be the normal side or the abnormal side. If the rotation be upward and backward, the normal side will be the longer and the higher. If the subluxation be downward and forward, the abnormal side will be longer and higher. In either event, the lumbar spine will bend toward the higher side and the dorsal and cervical spine will be recurved in compensation. The sorest place may be the insertion of the trapezius muscle on the superior curved line of the occipital bone. The lumbagos and other chronic ailments following these lesions are legion.

Examination and Diagnosis.—Patient on the back on a plane table. See that the body alignment is perfect. Go to the foot of the table and face the patient. Take hold of the ankles so that the thumbs fit into the depression below the internal malleoli. Swing the legs, telling the patient to relax. In case of the subluxation, the thumbs will not meet. At this time, exclude broken leg, lack of development and malformed pelvis.

Tap the toes gently outward with the fingers, telling the patient to relax or let go. The foot will turn out more on the affected side and the whole leg will oscillate more and more freely on the affected side. The upper thigh will be flat on the front of the

affected side and rounded on the normal side. The tendon of the psoas magnus will be tender on the affected side.

Turn the patient on his face. There will be tenderness over the sacro-iliac articulation on the affected side. The posterior superior spine will be more or less prominent as the subluxation is upward and backward or downward and forward.

In walking, the patient will "toe out" on the affected side. There will be a tendency to rest the leg on the affected side by some flexing of the thigh. The patient will complain that the leg tires easily on the affected side. There may be severe sciatica all the way from cramping of the toes to the most excruciating pain and uselessness of the leg. The patient may have gone on crutches for years.

Reduction.—Upward and backward subluxation—right side. Flex right thigh to vertical, place knee under right shoulder of operator, left hand under sacrum. Thrust heavily downward several times until the left hand feels that the joint moves, then have the patient kick the foot down to the other foot. Measure the ankles as at first. Then turn patient on his face, stand across the table to his left, grasp thigh at knee with right hand and thrust downward on sacro-iliac joint.

Upward and backward subluxation—left side. Flex left thigh to vertical, place knee under left shoulder of operator, thrust downward and repeat all processes as in case of right hip.

Downward and forward subluxation—right side. Place right hand under ischium, left hand against anterior superior spine. Thrust headward and dorsalward until bones are felt to slip into place. Measure the ankles.

Downward and forward subluxation—left side. Place left hand under ischium, right hand against anterior superior spine, thrust headward and dorsalward until bones are felt to slip into place. Measure the ankles as before.

When fully reduced, the subluxation rarely recurs except under violence such as caused the first lesion.

Anesthesia is unnecessary. There is seldom any pain. There may be some soreness for some time.

Do not apply bandages or casts.

In sciatica, reduce the innominate on the affected side.

Examination is indicated in all cases of constipation, prolapsus, piles, lumbago, sciatica, cystitis, impotency and ovarian and uterine trouble. Look for it in headache, backache and lameness.

E. M. PERDUE.

Kansas City, Mo.

RECOLLECTIONS OF MY LAST SESSION AT THE OLD MEDICAL COLLEGE OF VIRGINIA

The recent graduation of a number of young men from the Medical College of Virginia has brought back to my memory two of the saddest experiences of my life among its students of that year. This experience commenced in the lecture halls of this venerable old institution and ran through years of agonizing sorrow, before culminating in death. The whole tragic scene was enacted and ended, in all probability, many years before any of the graduates of this session were born, and it will to them be some unwritten history of two students of those days who drank deeply of the dregs of sorrow, with the cruel hand of relentless fate against them to their last breath.

In the years immediately following the civil war, the classes in most medical colleges were largely composed of men whose education had been interrupted by the four years of war, and the majority had been soldiers under the flag of the Southern Confederacy. The class of 1870-71 contained a goodly number of these men, some of whom bore honorable scars of battle on their persons. A number of the Faculty members had also seen service, either in the field or as surgeons, and a very strong feeling of friendship existed between certain professors and these ex-soldier students. Among the latter, was a man apparently about twenty-eight or thirty years of age; a tall, well developed, dignified, taciturn fellow. His bearing was soldierly, his dress was not flashy but the very best, and his courteous manner indicated the gentleman. He was approachable but was not a mixer and had no intimates. He was regular in his attendance on lectures and seemed to be a close student. He had been a Confederate soldier and I heard that he had a fine record, though he never talked about his exploits. Indeed, by reason of his modest and retiring disposition, none of us knew anything of him except that he

came from one of the counties of the Valley of Virginia.

On the night that all of the students of the graduating class assembled in the "green room" to learn the results of their examination, I noticed that he was, as usual, inclined to keep aloof from us and remain within himself, as though he were carrying some trouble within his bosom; still he smilingly acknowledged our salutations and jollying. When "Old Billy," the veteran old black janitor came in the room and handed each of us a sealed envelope, each man slowly opened his and announced the result quietly, for we did not wish to indulge in any jollification until we knew if there were any disappointed ones in the lot. One tall fellow who had plenty of money said, "well boys, they have thrown me"; and another good natured fellow who had not overworked himself said, "me too." We were consoling them when some one asked, where is L——? He had put his envelope in his pocket, handed Old Billy his usual honorarium of one dollar and left the room. In a few moments, he came back and said, "Boys, I am knocked out; they have turned me down and I am ruined." In spite of himself he was overcome by our expressions of sympathy and fell upon the shoulder of a companion and sobbed like a woman. We could only attribute his failure to graduate to one circumstance, which might have influenced the faculty. About six weeks before the end of the session, a big concern of railroad contractors had offered him a position as physician to a large force of employees on construction work on the C. & O. railway. They told him that they did not care about his not having graduated, as he could come back and stand his examination. It was a good situation and had to be filled and his only chance was to take it then. He laid the matter before the faculty and they advised him to stick to his college work and let the position go. But, he concluded to accept the position. When he came back, he failed as I have stated. It was thought by him and by many of us that his disregard of the advice of his professors had more to do with his failure than any unpreparedness for his professional work.

I saw that he was humiliated and utterly downcast, for he could not expect to hold his position with the contractors unless he were a regularly graduated physician. I took him with me to my room and advised him to go to a northern medical college, present his tickets showing his attendance, state the circumstances of his rejection here for the diploma, and ask them to matriculate him and give him an examination for the degree. He took my advice and left for Philadelphia next morning and, in a few days, I received a letter telling me that, after an honest and rigorous examination, he had been awarded the M. D. degree. He was the most grateful fellow I ever knew, and resumed his duties as surgeon with the construction company.

I think, within less than a year after we parted, I read of a terrible tragedy which occurred at the breakfast table of a prominent family in one of the upper counties of the Valley of Virginia, in which several brothers lost their temper in a dispute about some property division, with the result that pistols were drawn and an indiscriminate firing ensued, resulting in the killing or wounding of one or two of them. My unfortunate friend, whom we know as L——, was a participant in the dreadful affair and finally landed in the Virginia penitentiary with a term of years ahead of him for the part he took in the affray.

One morning, I got a message through one of the guards that the poor fellow wished me to call to see him. In company with Dr. C. A. E— who was a classmate with him also, I called at the superintendent's office. He seated us and sent for Dr. L—, the convict. It was a dreadful ordeal to meet this heartbroken, humiliated wreck, clothed in the coarse prison stripes, his hair closely cropped. His face, an ashen gray, suddenly became scarlet as he saw us gazing at his convict's garb and the shame of a supersensitive nature overpowered him. He stopped before reaching our outstretched hands and resting his head upon an upturned arm against the wall broke down and sobbed like a child. When he became more composed, he asked us not to judge him harshly as the dreadful affair was the result of sudden loss of temper by all of them and it was over before any of them actually realized what they were doing. We tried to comfort him and assured him that we would see the Governor and do our best to have him pardoned. It was one of the saddest interviews I ever had with a man in prison, and I never saw a more despairing countenance than his as

he turned to go back to his duties. We could not get any promises of a favorable nature from the Governor and we did not have the heart to go back and to tell him so. We frequently sent him delicacies and things for his comfort and time wore on until it was evident that he was giving way under the strain. He had been put in charge of the drug and pharmacy room of the institution and things were made as easy as possible; but the poor fellow was dying by inches, when long-delayed clemency allowed him to go to the old family home in touch with the blue peaks of Virginia mountains.

All was done that could be done by a forgiving and loving family to restore him to health again. Within a few weeks after his return, his sister noticed him one morning sitting on the verandah listening to the carols of the song birds and inhaling the fragrance of the climbing roses and honeysuckle. When she went out to call him to breakfast, he was sleeping peacefully with his head resting upon his folded arms on the porch railing; but, as she touched him gently to awaken him, she found that God had been good to him and sent the final balm for broken hearts to his tired soul.

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This unfortunate case reminds me of that of another student in the same class whose career was less tragic but even more deplorable. He came from one of the lower counties and was a man of nervous temperament; not robust, but a quiet, gentlemanly, good student. We became intimate and were close friends. He had a hospital appointment as interne and his duties were in the old infirmary attached to the college on Marshall street, under the charge of the late Dr. Isaiah H. White, one of the most accomplished anatomists and ablest surgeons of those days. It was evident to his friends that A. E. (our student friend) was overtaxing himself and was suffering a physical and mental strain. He would not listen to advice to knock off and take a rest, as it lacked only a few weeks of the end of the session. I tried to lighten his hospital duties as interne by taking his place, alternately the first or last half of the night, and sometimes the whole night. There was a case in the ward requiring the giving of a pill every two hours, and my turn came on at midnight. E— came to my cot and awoke me to make my rounds, I noticed that a man was lying upon his back with his eyes staring and mouth wide open. He was dead. I went back and asked E—if he knew that the man was dead. He seemed surprised and said he had given him his pills at regular intervals during the night and that he had his mouth open for the pill each time he came to him, and he just dropped a pill in it and went on. Upon examination, there were three pills in the poor fellow's mouth showing that my fellow student had passed him several times during the night without discovering that he was dead.

A few days later he came to me and said he was getting wrong and wished to tell me goodbye before he went "plumb crazy." I saw that he was unbalanced. In a few days, he became violent and was sent to Staunton Insane Asylum. I heard nothing from him for a number of years. One dreary, drizzly night, a man walked into my office and, looking at me with a glittering, uneasy eye, extended his hand, and said, "You don't know me, do you?" I recognized my student friend and he seemed to divine my thoughts, for he said, "You are surprised to see me out." I told him, I was glad to see him looking so well and to see that he was himself again. "Well," he said, "I'm not under restraint, but I am not myself again." "I am going back to the Asylum before I get off and do some killing." I was alone with him and he had a glint in his eye I didn't like. I said, "E—, do you feel like killing anyone now?"

"I don't know, I don't feel right and I am going to leave you now," and he turned abruptly and went out in the darkness and storm. I never saw him afterwards, but have often wondered what his disordered mind might have prompted him to do had he remained in my company much longer that cheerless and depressing night.

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"Old Billy."—My reminiscences of the College would be incomplete if I failed to introduce the dear old black janitor. We never knew him by any other name than "Billy." He was the first man I met when I went there to matriculate and almost the last one I remember when leaving. He was well settled in years and was truly an old Virginia gentleman in his manners. He knew how to get along with the boys and we all appreciated the interest he took in us. It was his business to arrange the

specimens and charts for the professors in advance of their lectures and to ring his big brass bell for the class to assemble. He was often present at the Faculty meetings and frequently gave warning to some of the boys to "pay more 'tention" to their anatomy, chemistry or physiology" when he heard their standing discussed in the Faculty room.

He was a very good mimic and could make a good short lecture on the subjects taught by most of the professors. Very often, when the class was assembled and before the arrival of the professor, the boys would yell out "speech, Billy, speech." If he thought he could give them a talk before the professor came in, he would risk it.

The boys played him a mean practical joke one day that greatly mortified the old fellow and for which he was a long time forgiving us. Billy had arranged the charts for the next lecturer and was sitting on the platform awaiting the time to ring for lectures, when someone from the Faculty room called out that Dr. —— would be very much delayed in meeting his class. Then the boys yelled to Billy to give them a speech. He seemed to be in a very good humor, and, feeling safe from discovery by the belated lecturer, he came to the stand, made a low bow and commenced an almost exact imitation of the doctor's voice, subject and gesticulation, and was so taken with our applause that he was unaware of the entrance of the doctor, who stood still behind him and listened attentively to old Billy's entertaining talk. When the old fellow made his closing bow and turned around he was too much surprised to even offer an explanation or apology. He just wilted and told the doctor, "I guess you wants another janitor after dis." But the doctor was a good sport, and said "Billy, you have left off the most important thing connected with the platform:—pass the hat around and if these boys don't all chip in for that lecture, they need not come before me for graduation." The old fellow wiped the beads of perspiration from his brow, said, "sure enough, boss?" gathered his old cap and called on every man in class, realizing a nice little sum. As he was leaving, he asked the professor to permit him to address a few more words to the class, and leaning over the desk he put up a broad grin and said, "who is de laugh on now?"

C. A. Bryce.

Richmond, Va.

RESOLUTION ADOPTED AT THE LAST CONVENTION OF THE AMERICAN MEDICAL ASSOCIATION

The following resolution will be read with great interest by all members, if you are not already familiar with it:

Whereas, The law of this nation no longer recognizes as legitimate any beverage spirits, and

Whereas, Undenatured ethyl alcohol has a legal and proper place in legitimate industry in connection with chemical, pharmaceutical or medical products, it is no longer proper that this product should be taxed 1,000 per cent of its value, and

Whereas, Narcotics are now properly tax free, although they sometimes find their way into illicit use, the same as alcohol, in spite of careful precaution of those interested in their legitimate use, and

Whereas, Such tax is no aid in the enforcement of prohibition laws and regulations, but rather has resolved itself into a penalty of $4.40 per gallon upon those who have occasion to use such undenatured alcohol in legitimate manufacturing or other processes, and

Whereas, Through foreign competition chemicals and pharmaceuticals from other nations where there is no federal tax on alcohol are able to compete to the detriment of American enterprise, and in the end the ultimate user pays the tax, often increased many fold, and in view of the fact that all tinctures and most other medicinal liquids contain much alcohol, with a resultant financial burden on the sick, and mostly upon the sick poor, therefore, be it

Resolved, That the American Medical Association believes that the federal tax on undenatured ethyl alcohol has outlived its usefulness; that such tax is a tax on the sick and on legitimate users thereof, and that the American Medical Association memorialize Congress to abolish the present special tax on ethyl alcohol. (*Jour. A. M. A.*, June 11, 1921, p. 1683.)

CLINICAL URANALYSIS

It is a lamentable fact that the general practitioner overlooks quite often the importance and the diagnostic value of a carefully conducted uranalysis. If he deter mines, though in a rather hasty manner, the absence or presence of albumin and sugar, he feels satisfied. Of course, it is impossible for the average physician to make as complete a uranalysis as a laboratory does.

He has not the time nor is he prepared to do it in the matter of equipment, reagents, etc. But, even from the ordinary tests that he does undertake to do, he could learn a great deal if he would only pay attention to the findings and draw the proper conclusions.

We consider it therefore of importance to give to the readers of CLINICAL MEDICINE a digest of a very important article on the subject, written by Dr. William Henry Porter, and published in the *Medical Record* for March 9th, 1921. Dr. Porter discusses and gives the technic of making the simple tests for the detection of indican, albumin, sugar, phosphates, excess of uric acid; and tells in a very instructive manner just what the presence of these substances means and what is their diagnostic and prognostic value.

Diagnostic Points of Value Found in Urine

A—Indicanuria.—The presence of indican indicates that there is improper functioning of the digestive and hepatic systems. The determination of its presence can easily be made by the following method: Take 10 Cc. of urine, 10 Cc. of hydrochloric acid and 5 drops of ½-percent solution of potassium permanganate, and shake. Then add 5 Cc. of chloroform and shake again. The following coloration may occur.

1.—Clear indigo-blue color indicating simple purtrefactive fermentation taking place in the intestinal canal.

2.—Decided purple color, indicating that, in addition to the fermentation, toxins are produced and we are dealing with a true toxemia.

3.—Bluish black or almost black color, indicating a severe toxemia. The darker the color, the greater the toxemia.

4.—Indigo red.

5.—Greenish coloration indicating that the bile, instead reaching the intestinal canal, is absorbed by the blood-stream through the lymphatic system.

B—Porter Metabolism Test. Take equal quantities of urine and pure hydrochloric acid, add 8 or 9 drops of ½-percent solution of potassium permanganate and then add about 1 dram of chloroform. Watch the result from hour to hour, allowing the test tubes to stand for 24 hours. Flocculent particles will develop and, if these are seen above the level of the chloroform, it is of grave prognostic importance forming the socalled "dead line" in the urine. If the flocculent ring is white and snowy and beneath the chloroform ring, it indicates varying degrees of faulty metabolism depending upon the depth and density of the ring.

C. Test for overproduction of uric acid.—After boiling the upper strata of urine, add a few drops of 4-percent acetic acid. Let it stand for 3 to 4 hours, after which the excess uric acid will crystallize just beneath the surface of the fluid. This test is valuable because the determination of overproduced uric acid is much more important than estimating the total of urea eliminated. The greater or the lesser elimination of urea is dependent upon the total amount of nitrogen ingested and assimilated, while the greater or lesser elimination of uric acid depends upon the amount of exertion, which demands a larger supply of protein and, hence, the system eliminates more nitrogen.

D. Test for Phosphates.—Overelimination and significance. Boil upper strata of urine in test tubes, a white cloudy opacity that clears upon the addition of acetic acid indicates overelimination. Overelimination indicates a malnutrition condition of the nervous system and is evidenced by general weakness and lack of nervous energy.

E. Test for Sugar.—There are two types of glycosuria; one type indicating that its presence is due to extrinsic causes, such as eating too much of carbohydrate, lack of out-door exercise, etc. The other type is due to some well defined intrinsic change. Both types are discovered on the application of Trommer's Test. The extrinsic type is recognized by the fact that the reduction of copper is effected, slowly at first, assuming a dirty-yellow aspect and, later, in an hour or so, the characteristic brick dust color. The intrinsic type gives an instantaneous reaction, and the deposit is rapidly produced. The prognostic diagnostic difference between the two is self evident.

F. Test for Albumin.—The ordinary test for albumin in the urine reveals three distinct types:

1.—Translucent type, indicating a slight disturbance in metabolism without any pathologic changes in the kidney.

2.—Opaque type in which presumably the disturbance in metabolism is more marked.

3.—Caseous and dense massive formation of the precipitate, which signifies that a pronounced parenchymatous nephritis exists and that the case is of a serious type.

It is needless to say that this classification of albuminuria into types is a very important one. Though the classification

given must always be of a rather subjective character, yet we can not fail to agree with the author's statement that, to say simply: "albumin present," means nothing so far as giving a clear picture of the pathological process is concerned: Dr. Porter emphasizes another fact in connection with careful uranalysis and that is, the necessity of analyzing a night and morning sample of urine for at least 3 days in succession, giving as his reason for this procedure the fact that changes in metabolism fluctuate very rapidly and that studying only one phase of the disturbance may lead to serious errors in the management of the case.

G. Microorganisms in Urine as of Diagnostic Value.—It is Dr. Porter's belief that the medical practitioner needs to be concerned only with three microorganisms in connection with uranalysis; namely: (1) the colon-typhoid bacillus group; (2) the gonococcus; (3) the tubercle bacillus.

The colon bacillus is usually found in and is responsible for 90 percent of cases of pyelitis.

The determination of the presence of tubercle bacilli and gonococci is of course most essential.

We fear that the directions given by Dr. Porter may seem at first rather exacting and that they require a great deal of time for carrying them out; but this is not so after one tries to carry them out. As a matter of fact, only a few extra minutes are spent on the task and the difference between careless and careful uranalysis is well established, bringing about beneficent results for the patient and added satisfaction to the practitioner of performing his duties conscientiously and well.

B. W. ABRAMSON.

Chicago, Ill.

METHYLENE BLUE AS A HEMOSTATIC[1]

It has ever been my purpose to bring before this Association something new and in keeping with the purposes for which this Association was organized. I am convinced that I have been able to make a clinical demonstration of the therapeutic value of electronic sign and rate of vibration, and at the same time present this subject to a medical meeting for the first time.

I have searched the medical literature for the therapeutic qualities of methylene blue. My library contains the Index Catalog of the Surgeon General of the United States Army. I have consulted it for references to the action of methylene blue and of pyoktanin or methyl violet. I have found no references to their use as hemostatics. The only reference to the hemostatic value of the anilin blues is found in a Preliminary Report, by Dr. Pasquale Romeo, published in Bulletin 1, of the Eclectic Medical University, March 1914, under the title "Methyl Violet or Pyoktanin in the Treatment of Uterine Hemorrhage."

Last January, I wrote a brief note to the *Medical Record* and, later, a short article to the *Medical Summary*. A number of letters were received from physicians in response to the note in the *Medical Record*, one from as far away as Australia, all evidencing the novelty of the observations.

For a number of years, I have used and advised the use of methylene blue in hemorrhage. I have even suggested it on the floor of this Association and in the classes conducted by Dr. Ireland. A very gratifying success has always followed its use. Many of my students use it with satisfaction.

Over two years ago, I was associated with a large institution for the treatment of rectal diseases by non-surgical methods. From 150 to 200 patients or more are in daily attendance. Some 4,000 have passed under my observation. Patients in every degree of affliction and of physical and nervous depletion come to this institution. The minimum period of treatment is about three weeks. Some severe cases require as much as six weeks.

Throughout this treatment, there is constant demand to control hemorrhage. This hemorrhage is rarely dangerous, but it must needs occur in a number of cases following action of the bowels during treatment for hemorrhoids. This hemorrhage must be controlled. In weak, anemic and hemophilic patients, there must be no loss of blood.

Into this institution, I introduced methylene blue as a hemostatic. It was an immediate success. I have had ample opportunity to demonstrate its clinical efficacy in a wide range of cases.

From my clinical experience, I am convinced that the aqueous solution of methylene blue is a hemostatic *par excellence* in all cases where clamping or ligation of large vessels is not demanded. It does not

[1]Read before the American Association for Medico-Physical Research, Chicago, Sept. 27, 1921.

coagulate or corrode tissue. It rather promotes healing. It is stimulating and antiseptic. It does not cause pain.

In slow, oozing, venous hemorrhage from any accessible part of the body or in any cavity in which it can be applied, it is very effective. I inject it in the rectum and uterus, pack cotton soaked with it into the vagina, apply it on a pledget of cotton by means of an applicator, in the nose, mouth and pharynx. Give it by mouth in hemorrhage of the stomach. In hemorrhage of the bladder, inject direct or through a catheter. In cases of post-partum hemorrhage or excessive and prolonged menstruation, it is a success.

I prepare this solution in a strength of 0.1 percent, that is, 1 part by weight to 1,000 parts of water. I generally put 1 Gram of methylene-blue pigment in a liter of water. One Gram, or 15 grains, in a quart will do as well. I prefer a sterile tap water, slightly alkaline with the lime salts. This preparation is so cheap that under ordinary circumstances it should not cost over twenty-five cents per half-gallon. There are no difficulties in its preparation, its use presents no technicalities.

There are no reactions, no contra-indications, no difficulties of administration except those common to all direct medication of the respiratory tract. The only limitation refers to the amount given by mouth. This need never be a toxic amount in this dilution.

While mine has been distinctly a clinical research, I have given much thought to the mode of action of methylene blue in stopping the flow of blood. I am convinced that I have encountered an important point in color therapy. If color is merely an expression of a rate of vibration, then the vibratory rate of methylene blue is very high. Then, these apparently aqueous solutions of the anilin blues are colloids which enter into colloidal combinations with the tissues and impart their colors and rates of vibration to the tissue complex. I do not think that methylene blue coagulates the blood. I am of the opinion that it stops the flow of blood by causing such a contraction of vessels and tissues as to close the lumen of all vessels that are not so large as to require clamping or ligation under all circumstances.

From all the clinical facts coming under my observation, I have assumed two properties of methylene blue and submit them for further scientific determination, lacking in my laboratories the equipment necessary to their accurate determination.

1.—That the electronic sign of methylene blue is positive.

2.—That the rate of vibration of methylene blue is very high.

Dr. Abrams writes me that the vibratory rate of methylene blue is not the same as the rate for coagulation of blood.

E. M. PERDUE.

Kansas City, Mo.

PRESERVING THE POSITIVES

Experimental medicine has its place, so has experimental physiology and biology; but, truth, once determined and accepted by the approved standards, should not be challenged. Lawyers do re-open cases but this is proof against the unanimous acceptance of the evidence.

Paul says to his young friend Timothy: "continue thou in the things which thou hast learned and hast been assured of, knowing of whom thou hast learned them."

Why did you select the college whose diploma you hold? Why then doubt and discount the positive facts the faculty taught you. Strange as it may seem, come to think of it, such skepticism is never applied to pathology or anatomy or even physiology. Of course, we have demonstrated and proved the facts of anatomy. Did we not handle the bones, vessels and nerves? In pathology, we actually saw the three stages of a lobar pneumonia and all the phenomena of inflammation.

Now, while we went through the same laboratory work in experimental and applied physiologic demonstrations, the strange part of it is the growing doubts of applied therapeutics in actual practice. In the court of medical opinion, there is no reversal of the decision that morphine is depressant, strychnine stimulant and pilocarpine diaphoretic. One would not get an audience to admit that digitalis is an hypnotic, because it is not. Nor would a paper be interesting which aimed to demonstrate quinine as an antiperiodic, as the fact is too well known to get hearing.

Our plea is for a preservation of the therapeutic positives. The successful physician will know and know that he knows, and no argument or evidence to the contrary will shake his sureness. The more

facts he knows and applies, the more successful he is. The more truth with which he surrounds himself, the clearer his atmosphere of positives. Let no man rob you of your value to your clientele by his doubts.

The signs of the times point to a return to positive therapeutics. To be successful, begin just where you are, throw out the chaff and hold to the faith of your student days based on the evidence of your own work with the alkaloids in your physiologic laboratory. Croton oil will purge. Aconitine will reduce fever, bring down a too rapid pulse and quiet nervous instability. Pilocarpine will prove a diaphoretic, and so on.

Just to be constructive and suggestive: do you know what emetine will do in hemorrhage, what condurangin will do in gastric ulcer or what chromium sulphate will do in chronic prostatitis?—not just what the books say but what applied therapeutics confirms?

A patient says to her doctor "I suppose you are very busy these days." He replies, "No, madam, I never have more than one patient at a time."

Good judgment and approved practice suggest the advisability of having in the thought of the moment one patient only and that one a definite clinic for all the best methods of diagnosis emphasizing, if anything, the work of the department of medicine with ample notes for subsequent reference and further study. "Continue thou in the things which thou hast learned" (St. Paul).

"RODENT ULCER" OF THE FACE

In all cases of cancer of the lips, jaw and the face, more especially that form of the disease commonly designated as "rodent ulcer of the face," I have found an extensive invasion by Spirochæta Vincenti and the staphylococcic group. The Vincent spirochete, as is well known, causes active ulcerative destruction of tissues and greatly assists the cancer invasion. In these cases, in particular, the use of arsphenamin (neosalvarsan) will give marked relief and apparently effect a cure, in some instances. The Vincent spirochete is very susceptible to this drug and it should be administered intravenously and also locally. For local application, dissolve or suspend the arsphenamin in glycerin and keep in an amber-colored bottle or in the dark. If there ever has been a case of lip- or mouth-cancer which was not complicated by the Vincent spirochete invasion, the undersigned would like to know of it. The diagnosis can be made microscopically only.

ALBERT SCHNEIDER.

Lincoln, Nebr.

LOCAL TREATMENT OF DIPHTHERIA

It may sound like heresy to propose a treatment for diphtheria other than the well established and efficacious treatment by diphtheria antitoxin, but Dr. Lester Curtis (*Med. Record* June 25, 1921) assures us that in proposing this treatment he does not wish to oppose the use of antitoxin. He offers it simply as an addition to our armamentarium and expresses his belief that his method will prove efficient in a large proportion of diphtheria cases.

His method consists in applying a solution of mercury bichloride, 1:2000, to the throat or wherever the pseudomembrane is found. He applies the solution by syringe rather than with a spray, because the spray spreads the solution in minute quantities and has only a cleansing and not a penetrating effect and is therefore ineffectual. He cites a case of a mother and two daughters, upon whom he used this method thirty years ago, when antitoxin was still unknown, and in whom he obtained wonderful results.

He also cites a case of recent date (Oct. 13, 1919) where he used the same treatment and secured remarkable results. The patient was a school teacher in a Chicago public school. Twenty-four hours after the onset of her disease, she called for Dr. Curtis. At the time of his first visit, she had a temperature of 104.8 degrees F., patches on each tonsil nearly the size of a quarter coin, and the other symptoms of diphtheria. Syringing of the throat with bichloride solution, 1:2000 was at once instituted and repeated every two hours. Twenty-four hours later, the throat was entirely free from membrane and the temperature was slightly subnormal. A few minutes after the first treatment a swab was taken and sent to Board of Health for examination. The report was to the effect that it was negative for diphtheria, proving, in the author's opinion, that the solution had killed the bacilli.

What Others are Doing

VISCEROPTOSIS AS A CAUSE OF STOMACH TROUBLE

Ever since we began to avail ourselves of the x-ray and fluoroscope for diagnosis of gastrointestinal conditions, visceroptosis has received a large share of attention by gastroenterologists and is held to be responsible for a great many vague as well as definite gastroenteric conditions.

The characteristic landmarks of this condition, as pointed out by Dr. W. S. Reid (*Boston Med. and Surg. Jour.*, June 16, 1921), are:

1.—Lack of good physical development, with a characteristic carriage known as "posture of fatigue".

2.—Malnutrition.

3.—The vague and voluntary complaint about "stomach trouble".

Dr. Reid cites a number of cases that in one way or another present these characteristic findings, though the symptoms complained of are so irregular that they do not point to any definite disease. The diagnosis must be made rather by the process of exclusion and by ruling out the possible existence of other disease. The Roentgen ray is of course the best means for proving the diagnosis.

As to treatment, one must have in mind that neurasthenia is commonly found in connection with visceroptosis and it must be directed toward the mental condition of the patient as well as toward improving his nutrition and removing any mechanical handicaps that may be present.

It must be impressed upon the patient's mind that visceroptosis is not a disease per se, but rather a result of imperfect physical development, a condition that can be altered by the patients, themselves, if they only would apply themselves to the task. The anxiety as to their condition is thus relieved and successful treatment may be instituted.

The improvement of their nutrition depends mainly on whether any cause of subnutrition, as classified by Dr. W. R. P. Emerson, is found. One should look for the presence of physical defects, poor home surroundings, overfatigue, bad food, bad habits, and poverty. All these conditions must be rectified before starting on direct medical treatment. If there is underfeeding, the attention must be centered upon increasing the amount of food to be taken, even though the increase at the start may cause distress and pain. Combat the pain and hypersensibility by giving the patient valerian, bromides and even codeine or morphine.

If the patient succeeds in putting on fat, a great deal of benefit is derived thereby. Treat and help the patient to get rid of constipation which is present as a rule. The use of liquid petrolatum is often very helpful. The mechanical obstruction can be relieved by giving some support to the sagging abdominal wall, by a properly fitting corset. Certain simple exercises and the assuming of certain postures prove helpful sometimes. Two positions that have given gratifying results to Dr. Reid are: (1) Lying on the back with a pillow under the hips, none under the head and the knees flexed; (2) lying prone with a pillow under the lower abdomen.

ENURESIS

Every physician in general practice is frequently baffled by his failure to treat successfully a case of enuresis. The causes of this condition are so many and the faithful carrying out of his instructions is so rare, that the attempts of the doctor oftentimes spell failure.

Pyelitis, as a cause, is beginning to be considered more and more by leading pediatricians and bed-wetting is considered by many as a very suggestive symptom of chronic pyelitis. Now, it has been known that pyelitis is amenable to treatment with creosote. Dr. R. H. Cowley (*Ky. Med. Jour.*, Oct., '21, p. 614) claims that it is the belief of many that, in doses of 3 minims, three times a day for a child of five years, given in capsule form, this drug has proven very beneficent and that there is rarely a case of enuresis which does not

respond to it. If that be true, every one will, of course, agree with him that the knowledge of the efficiency of this drug not only should be held by the medical profession, but that it should become the common possession of every mother in the country. *Fiat experimentum!*

EPIDEMIC ENCEPHALITIS

Dr. F. Neuhoff (*Weekly Butt. St. Louis Med. Soc.*, October 20th, 1921), gave a paper on the radiculitis-type of epidemic encephalitis. He has apparently made a careful study of this obscure disease, which closely followed the influenza epidemic, and his conclusions, as found in his own abstract, merit repetition almost verbatim.

He states that epidemic, or lethargic, encephalitis causes not only general toxic condition but also focal lesion in nerve tissues. For that reason, there are various symptom complexes of this disease depending upon what part of the central or peripheral nervous system is affected. Thus, we have the following types of epidemic encephalitis: lethargic, cataleptic, poliencephalitis, anterior and posterior, myelitis, *porkensonion*, meningoradicular, acute psychotic, epileptomaniacal, meningitic, polyneuritic, cerebellar, hemiplegic, diplegic and monoplegic. The rarest form is the radicular, or spinal-root type. In the case of radiculitis that Dr. Neuhoff reports, the following symptoms presented themselves: At first, patient complained of severe spinal-root pain of left arm, left half of the abdominal wall and of the left lower extremity consecutively. Then followed painful intermittent contractions of the abdominal muscles of left side. On the 10th day, only, did the unmistakable signs of lethargic encephalitis become apparent. Such aberrant forms are hard to diagnose, though it is very important to make a diagnosis early. There are good reasons to believe this disease communicable and, from a public health point of view, the early recognition of this disease is inestimable.

BUBONIC PLAGUE

There is an old adage: He is wise, who fears the future, and it is to the danger in the future that lies in the pandemic of bubonic plague, that Dr. Krumbhaar (*Penn. Med. Jour.*, Aug. 21, Page 786), calls our attention. Bubonic plague is, of course, more prevalent in the Orient and for the last twenty-six years has caused millions of deaths, but our country has not been totally free from it. Since October 16, 1920, sixteen human cases have occurred, with six deaths. One case was recognized in Galveston on June 6th, 1921, and, since then, twelve other cases were reported, five of these cases terminating fatally. Of great significance is the fact that, previous to the outbreak, a great number of rats of that locality were dying and that twenty percent of them were plague-infected. This at once leads us to a strengthened belief that the rat is the chief source of the infestion and it confirms the generally-held opinion that antiplague measures should be directed chiefly against the rat. It is Dr. Krumbhaar's opinion that rat-proofing is by far the most effective measure leading towards eradication of the rat. Successful deratization can be accomplished if the buildings are so constructed that they are rat-proof or that the premises be kept clean and make conditions for rat existence and reproduction unfavorable. Additional measures are:

1—Rodent extermination by rat trapping.

2—Prevention of entrance of foreign rats by incoming ships—rat survey, i. e., that is the catching of rats and examining them for pest bacillus infection.

PAN-PEMMICAN

Pan-pemmican is a rather odd sounding name for a food substance, but, if we are to believe Dr. Homan (*Med. Rec.*, Nov. 5, '21) the substance is a very appetizing and palatable food. This is the one of the many good things bequeathed to us by the only original American—the Indian. It consisted of dried venison beaten to a pulp, with certain wild berries or fruits; animal fat was added, and the whole then pressed into the form of cakes. The early settlers somewhat modified it by adding parched corn to it, and made of it a very appetizing and digestible aliment.

The author extols the properties of this food, pointing out that not only does it possess caloric value sufficient to maintain a normal metabolism, but that it has the advantages over other foods, such as slush, porridge, pudding, etc., in the fact that it stimulates the grinding action of the jaws and teeth, thus preserving the wholesome

condition of the gums and teeth and preventing their early decay and disintegration. It also induces a greater flow of saliva on account of these increased chewing performances, thus assuring better digestion.

Its comparative low cost of preparation may help to relieve for some very worthy persons the pinch of high prices on such food stuffs and assure them a normal maintenance of health.

The author incidentally calls attention to many deplorable conditions in the preparation and distribution of food, as carried on in our public eating places. He holds these conditions chiefly accountable for the malnutrition now visible everywhere among the population. He makes a plea chiefly in behalf of the younger generation that seeks to hide the effects of malnutrition with masks of paint and powder. The problems he raises are timely and offer lots of food for thought.

NON-SURGICAL DRAINAGE OF THE GALL BLADDER

For the benefit of those who wish to avail themselves of the Meltzer-Lyon method of gall-bladder drainage by medical means, we give in detail the procedure as carried out by Dr. Lucas (*Kentucky Medical Journal*, July 1921, Page 399).

The method of drainage is as follows: The work must be done with the patient fasting. Usually, the patients come in the morning before breakfast. The mouth is thoroughly washed and the throat gargled with a solution of potassium permanganate, 1 grain to 2 ounces of water. A sterile duodenal tube with the Lyon tip, which has been found the most satisfactory of the various tips, is now introduced. Little or no difficulty is encountered in the introduction —even less so than with the ordinary stomach tube. After the tip has reached the stomach, the aspirator syringe is carefully applied and any fasting-contents withdrawn for examination. The stomach is then washed out with sterile water and, after the return flow is clear, a dilute solution of zinc chloride is introduced and, after recovering, the stomach lavaged once more with sterile water.

Then, 250 Cc. of permanganate of potassium, 1:10,000, is introduced. After this is returned, the stomach is again lavaged. The patient then assumes the recumbent posture, turns on the right side and is instructed to slowly swallow the tube to the third mark, taking twenty to thirty minutes to do so. Usually, at the end of this time, the tip of the tube has reached the duodenum. At times, raising the foot of the couch or placing pillows under the hips has seemed to aid its passage. The proof of the passage of the tube can be shown in various ways; by the character of the aspirated fluid, the socalled duodenal "tug" and the fact that water, milk, or any colored fluid cannot be immediately aspirated. In one case, in a professional colleague, the passage through the pylorus was evidenced by a gush of air through the tube.

After being sure that the tube has passed, a syringeful of air is injected through the tube to balloon the duodenum. The first sterile vacuum bottle is then attached. As a rule, in the healthy duodenum, the first fluid should be bile-free, syrupy and stringy in consistence; but, under pathological conditions, many variations are found. At this point, the bottle is detached and 75 mils (Cc.) of a 25-per cent sterile solution of magnesium sulphate introduced. Dr. Lucas made it a practice to introduce the solution by gravity, in the majority of cases. The bottle is again attached and aspiration started. In from one to fifteen minutes, the return flow begins—first, the magnesium solution is partly returned and then the bile, diluted by this solution, followed, in varying lengths of time, by the darker bile. This can be seen through the window in the tube and, when the deep yellow bile begins to show, the second vacuum bottle is attached. The bile continues to flow intermittently, becomes darker and more viscid and, after recovering from 30 to 166 mils, in Lyon's own experience, it is followed by a light lemon-colored fluid, lacking the viscosity of the second bile, which is collected in a third bottle.

INFANTILISM IN CHILDREN

Infantilism simulates cretinism in a great many ways and a great deal of confusion exists in regard to this subject.

Cretinism can easily be distinguished from infantilism if these points are kept in mind:

A typical cretin has a vacant expression of the face, a large, thick and protruding tongue, coarse hair and fatty tumors. The formation of his hands is usually of diag-

nostic importance. The hands are broad and squat with short stumpy fingers. The myxedematous skin is usually absent in infantilism though it is very characteristic of cretinism.

Infantilism on the other hand is simply characterized by a retardation of the normal development. Dr. Leebron (*Penn Med. Jour.*, Aug., '21, p. 810) points out that there are two types of infantilism, namely, the Lorain type and the Brissaud type.

The Lorain type presents a normal intellect, size of body stationary at puberty, giving the picture of a miniature adult.

The Brissaud type presents the following picture: The body is small, the head large, abdomen prominent, limbs short and rounded, trunk relatively large, sexual organs undeveloped, intellect retarded. The chief etiologic factor is considered to be some disturbance in the endocrine system.

The Brissaud type responds to thyroid extract most readily, but this should be given also in the other types. Pituitary disturbances may produce infantilism and, in that case, Dr. Leebron advises the use of pancreatic extract.

BRONCHIAL ASTHMA-AUTO-HEMOTHERAPY

Dr. Andres Henske (*Jour. Mo. State Med. Ass'n.*, Dec. 21, Page 431) reports sixteen cases of asthma which he treated with autogenous defibrinated blood, and claims that the results have been better than with any other method of treatment. He cites Kohm and Emsheimer who have reported a series of six cases definitely benefited by this treatment and reports their theoretical consideration for using this method. They state:

1—Asthma is due to a spasm of the smaller bronchi.

2—Spasm of the bronchioli is an anaphylactic manifestation which may be explained on the basis of protein sensitization.

3—The protein which may have gained access to the body through the alimentary tract or the nasopharynx is probably in the blood just prior or during the attack.

4—To produce active immunization in anaphylaxis, small doses of the causal protein should be injected and, for that reason, repeated injections of defibrinated blood, containing the causative protein, should prove beneficent.

The method of injecting the defibrinated blood is so simple that it commends itself to the use of every practitioner. The apparatus consists of a 25-mil Luer glass syringe, a rubber tourniquet, a 4-ounce bottle containing four or five glass beads, an ordinary medicine glass and six ounces of sterile normal saline solution. The technic is as follows:

1.—Apply tourniquet to patient's arm and withdraw 25 mils of blood from the median cephalic vein.

2.—Transfer blood to the bottle containing glass beads and gently shake it for ten minutes until the blood is completely defibrinated.

3.—Filter blood through sterile gauze into medicine glass.

4.—After washing the syringe with sterile saline solution, draw up the defibrinated blood and inject subcutaneously into the interscapular space.

5.—Repeat this injection every 4th or 5th day until seven to ten injections are given.

The author discontinues his treatment if there is no improvement after the third injection.

Asthma has long taxed the ingenuity of the therapeutist, possibly because, as Dr. Henske points out in his conclusion, asthma is not a disease entity but a symptom or, rather, a reaction to some irritative cause or a manifestation of tuberculosis or syphilis. Some cases of asthma may be benefited by a change of climate, by modified diet or by specific antigen treatment, but the majority of cases do not seem to yield to any treatment. Any therapeutic measure that will bring relief to the unfortunate sufferers with asthma is of course welcome and worthy of an unbiased trial.

Among the Books

MOYNIHAN: "THE SPLEEN."

The Spleen and Some of Its Diseases. By Sir Berkeley Moynihan. 129 Pages. 13 diagrammatic Illustrations. Philadelphia: W. B. Saunders Company, 1921.

This monograph is the outcome of the Bradshaw lecture of the Royal College of Surgeons of England, delivered by the distinguished author. It deals with the anatomy, surgery and functions of the spleen and discusses pernicious anemia, leukemia, Hodgkin's disease, splenic anemia, hemolytic jaundice, polycythemia, etc.

Sir Berkeley is too capable a surgeon to have delivered an important lecture without having given a good deal of thought in its preparation; and, in spite of the great difficulties that must beset any one attempting to classify our present limited knowledge of this class of blood diseases, he has succeeded at least in presenting the subject in an orderly and fairly systematized manner.

In concluding this work, the author says: "A further step in the investigation of the clinical condition should aim at the exact discovery of the site of the lesion in certain particular cell types. . . . The tissue affected . . . being recognized, further research must be directed to the discovery of the type of infective agent at work, whether bacillary, spirochetal or other. In other words, the patient is no longer to be regarded merely as the victim of some type of disease, but as the victim of disorders of a certain character in certain parts of certain anatomical or functional systems of the body."

All this is sound doctrine, long since recognized by the medical profession as the only method enabling one to arrive at exact diagnoses; and, as for the prospect of a cure, hope lies either in accident (empiricism), which is hardly to be anticipated, or in scientific methods on a sound basis.

Splenectomy, the x-rays, antiluetic treatment, the administration of bone marrow, arsenic and other measures have today their advocates, but the failures are still very numerous. The fact is that we are today as much in the dark about the class of affections under consideration as we have been ever since Galen referred to the spleen as the organ full of mystery. Indeed, it is doubtful whether we are on the right track in our interpretation of the serious blood changes and, until we are sure of that, we must look upon the present monograph as a well arranged tabulation of our present knowledge and not as a contribution shedding new light.

Although the price for the volume is relatively high (five dollars) we feel that the earnest student should acquire and read the book; for, he will find in its pages more food for thought than can be had from the perusal of many medical and surgical textbooks.

NEWMAN: "EVOLUTION, GENETICS"

Reading in Evolution, Genetics, and Eugenics. By Horatio Hackett Newman. Chicago: The University of Chicago Press. 1921.

What such periodicals as the *Literary Digest* are to the news of the day, this volume is to the subject of Evolution. That is, it presents in collated form extracts from Darwin down, making it possible for the busy reader to get a bird's-eye view of the subject, and at the same time pointing out the larger works which he may read if he wishes to go deeper into any phase of the subject. The author, who is Professor of Zoology in the University of Chicago, felt, in his lectures, the need of a textbook which should contain in one volume the gist of the subject, and the book is the result.

Our universities are doing the reading public a magnificent service in issuing textbooks of the character of this one. Professor Breasted, of Chicago, has given us a volume on Ancient History, as fascinating as a novel; Professor Robinson, of Columbia, has done the same for Medieval and Modern History; Professor Manly, of Chicago, has issued a volume of prose and

down to the present—selections long enough and representative enough to give a large class of readers just what they have no other means of getting, namely, a bird's-eye view of the best English literature.

The present volume serves a similar purpose for the subject of Evolution. Thousands of readers who are interested in the progress of science, can find here what they would have to wade through scores of volumes to get. The book is a library in itself, and even better; for, few persons have the time or the skill to cull from a library the knowledge offered here. It is the cream of all libraries. To dip into it is to resolve to own it.

CLARKE: "ORGANIC DEPENDENCE AND DISEASE"

Organic Dependence and Disease: Their Origin and Significance. By John M. Clarke, D. Sc., LL. D. Illustrated. New Haven: Yale University Press. 1921.

This little work is a bit of pure science—a study of Disease and Parasitism based on Paleontology. Taking Huxley's definition of disease, "A perturbation of the normal activities of a living body," applying it to the remains of organic life found in the oldest rocks, and observing their evidences of parasitism, altogether presents a view-point novel and striking. Readers interested in biology and paleontology will find here food for thought.

SHATTUCK: "PRINCIPLES OF MEDICAL TREATMENT"

Principles of Medical Treatment. By George Cheever Shattuck, M. D., A. M. Fifth Revised Edition. 310 Pages. Boston: W. M. Leonard, Inc. 1921.

It is very much easier at first, though not in the long run, to follow some one else's thinking than to think for ourselves. When the present Reviewer was at college, he noticed that, when the professor talked about principles, there was more or less yawning in the class; but, when he gave a prescription, every notebook came out. This tendency in student nature explains why so much treatment of disease is routine, perfunctory, empirical. To consider the principles involved in a given case, and then devise a line of treatment based on those principles—that is scientific medicine and is, in the long run, more satisfactory than the lazy way. The man who does it is cultivating his judgment and growing more self reliant every day.

The book before us is a recognition of this truth, and probably that explains why it is in its fifth edition. One Reviewer calls it a "fundamental" book. The discussion of each disease is begun with a statement of the principles to be kept in mind during the treatment. The therapeutics of the book is so arranged as to be convenient for reference. Every alternate page is blank for entering notes.

CARTER: "NUTRITION"

Nutrition and Clinical Dietetics. By Herbert S. Carter, M. A., M. D., Paul E. Howe, M. A., Ph. D., and Howard H. Mason, A. B., M. D. Second Edition. Thoroughly Revised. Philadelphia: Lea and Febiger. 1921.

A comprehensive textbook on the subject of dietetics. The present edition is a revision of the first, eliminating obsolete matter and introducing the latest knowledge on the subject, particularly as to vitamines. During the last three or four years, the progress of investigation of the subject of dietetics has been so rapid that a textbook soon becomes partially obsolete. The reader will find here a résumé of the latest knowledge on everything relating to diet, digestion, and assimilation, well arranged and interestingly written.

MacARTHUR: "MENTAL-HOSPITAL MANUAL"

Mental Hospital Manual. By John MacArthur, M. R. C. S., L. R. C. P. London: Oxford University Press. 1921.

Any medical man entering upon his duties on the medical staff of an Asylum for the Insane would find this book invaluable. It gives briefly the special information that he would feel the need of, and which is not generally found in textbooks. He will find himself confronted with many situations new to him, and, yet, in which he must act promptly. The author has endeavored, as far as possible, to suggest methods of meeting such conditions. He has not attempted to make this a treatise on mental diseases, referring the reader to the standard works on the subject. Nothing that has not stood the test of experience is recommended in the way of treatment.

Even the general practitioner, especially if located in remote and isolated districts, far from the large cities, will find this a

valuable book to have in his library, as he may at any time be called upon to deal, at least temporarily, with various forms of insanity.

The book also contains a large number of blank forms adapted to the needs of hospitals for mentally affected patients.

SMITH: "HEART AFFECTIONS"

Heart Affections. Their Recognition and Treatment. By S. Calvin Smith, M. S., M. D. Illustrated. Philadelphia: F. A. Davis Company. 1920.

We can not express better the spirit of this work than by quoting these sentences from the preface and the introduction:

"A book that does not presuppose a knowledge of the subject, and that strives to encompass in a small volume sufficient fundamentals of anatomy, physiology, pathology, diagnosis and treatment to give to the busy physician a working knowledge of the more recent advances in studies of the heart."

"The day has passed when heart disease and prognosis are determined by the detection of cardiac murmurs alone. The wisdom of an oracle is no longer believed to dwell in the mouth of a stethoscope."

"Auscultation should hold sixth place in our methods of physical diagnosis, being preceded by history taking, inspection, palpation, percussion, and mensuration."

"The muscle is of more importance than the murmur, and the rhythm of more importance than the rate."

An examination of the volume reveals that the author has faithfully adhered to his ideal.

OSLER: "MODERN MEDICINE"

The Evolution of Modern Medicine. A Series of Lectures Delivered at Yale University on the Silliman Foundation in April, 1913. By Sir William Osler, Bart, M.D., F.R.S. New Haven: Yale University Press. 1921.

A posthumous work by the late Doctor Osler, on the evolution of modern medicine, necessarily is of more than passing interest. Doctor Osler's great merits for the history of medicine and his wholehearted stimulation of this study; as well as his medical historical writings, place him in the front ranks of medical historians.

The volume before us contains six chapters, dealing, after the Introduction, with Greek Medicine; Medieval Medicine; The Renaissance and the Rise of Anatomy and Physiology; The Rise and Development of Modern Medicine; The Rise of Preventive Medicine. The book is generously illustrated, especially with very interesting portraits, and it is beautifully gotten up. It is not only a splendid monument to Doctor Osler but also an attractive addition in physicians' libraries.

"PRACTICAL MEDICINE SERIES"

The Practical Medicine Series. Comprising Eight Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charges of Charles L. Mix, A.M., M.D. Chicago: The Year Book Publishers. Series of 1921.

Volumes 2, 3 and 4 of the 1921 series were announced in the January issue of this journal, on page 83. In that place, we have repeated a statement that we often have made regarding the excellence of this publication.

Volume 5, which reviews the literature on gynecology and obstetrics, contains much instructive material. The various problems of pregnancy, for instance, have been discussed widely and, for that reason, numerous abstracts are to be found in this volume of "Practical Medicine Series." These abstracts gain by the comments of the editors with which the text is freely interspersed.

BOYD: "PRACTICAL PREVENTIVE MEDICINE"

Practical Preventive Medicine. By Mark F. Boyd, M. D., M. S., C. P. H. Illustrated. Philadelphia: W. B. Saunders Company. 1920.

This book is an attempt to deal briefly but comprehensively with this subject. To cover the whole ground it was, of course, necessary to condense greatly in order to treat so large a subject. A careful examination seems to indicate that the author has accomplished this without sacrificing any vital information. The brevity of treatment involved is compensated for by a very complete system of references, at the end of each chapter, to the bibliography of the subject. It is a very valuable handbook for all who are concerned in sanitation.

In the section devoted to Food Requirements, we note that the author calls attention to the injurious effects of excessive consumption of food, a source of disease

which is too often overlooked, not only by physicians but also by most writers. More frequent emphasizing of this matter would have a marked influence on public health.

ELLIOTT: "TROPICAL OPHTHALMOLOGY"

Tropical Ophthalmology. By Robert Henry Elliott, M. D., B. S., Sc. D., F. R. C. S. With 7 plates and 177 illustrations. London: Oxford University Press. 1920.

The *raison d'être* of this interesting work is so well expressed by the author in his preface that we quote a few words: "So far as I am aware, no one has ever yet written a monograph on tropical ophthalmology. Such a task requires the best part of a lifetime of experience, and the majority of those who have thus qualified themselves have returned to Europe too climate-wearied to undertake a work of this magnitude. The consequence has been that each fresh student of the subject has had to start almost from the commencement. Such a state of affairs is truly lamentable. It means a waste of time, energy, power, and ability."

The medical profession, and all dwellers in tropical lands, owe a debt of gratitude to Dr. Elliott for his unselfish labor. The peculiar conditions of tropical life, climatic, entomological, and social, all combine to make the subject an interesting, indeed, a fascinating one. The present Reviewer has seldom been so impressed with the tremendous power of ignorance and superstition as in the reading of this book. We who practice in civilized lands have but a faint conception of the obstacles which the medical man, and especially the opthalmologist, has to contend with among the natives of tropical countries.

The book is well written in a style that can not fail to interest any scientific man, no matter what or where his field of labor may be. A few of the chapter titles suggest their interest: The Poverty and Mental Attitude of the Natives; Suspicion of Foreign Agencies; Unqualified Native Practitioners, Their Remedies and Surgical Procedures; Effects of Bright Light; Eclipse Blindness; Wind and Dust; Injuries and Infection by Insects; Trachoma; Cataract.

McCARRISON: "DEFICIENCY DISEASE"

Studies in Deficiency Disease. By Robert McCarrison, M. D., D. Sc., LL. D. Illustrated. London: Oxford University Press. 1921.

At the present time and for some time to come, this subject is, and will be a live one. Any physician who is interested (and everyone should be) in the study of the vitamines, the endocrines, and their relation to deficiency diseases, will find here the latest knowledge on the subject, brought down, in fact, to February, 1921. The author gives the results of experimental studies upon animals, as well as of observation of vitamine deficiency in the nutrition of the human body. No discovery for some years past equals in interest and importance that of these remarkable substances classed under the general name of vitamines. We shall not attempt to analyze the contents of this volume. It must be read to be appreciated, and the subject is not one to be readily epitomized.

These publications of the English universities have been, since the war, rather high priced. This is true of books in general, but not quite to the same degree. Still, a book of the importance of this one is cheap at any price.